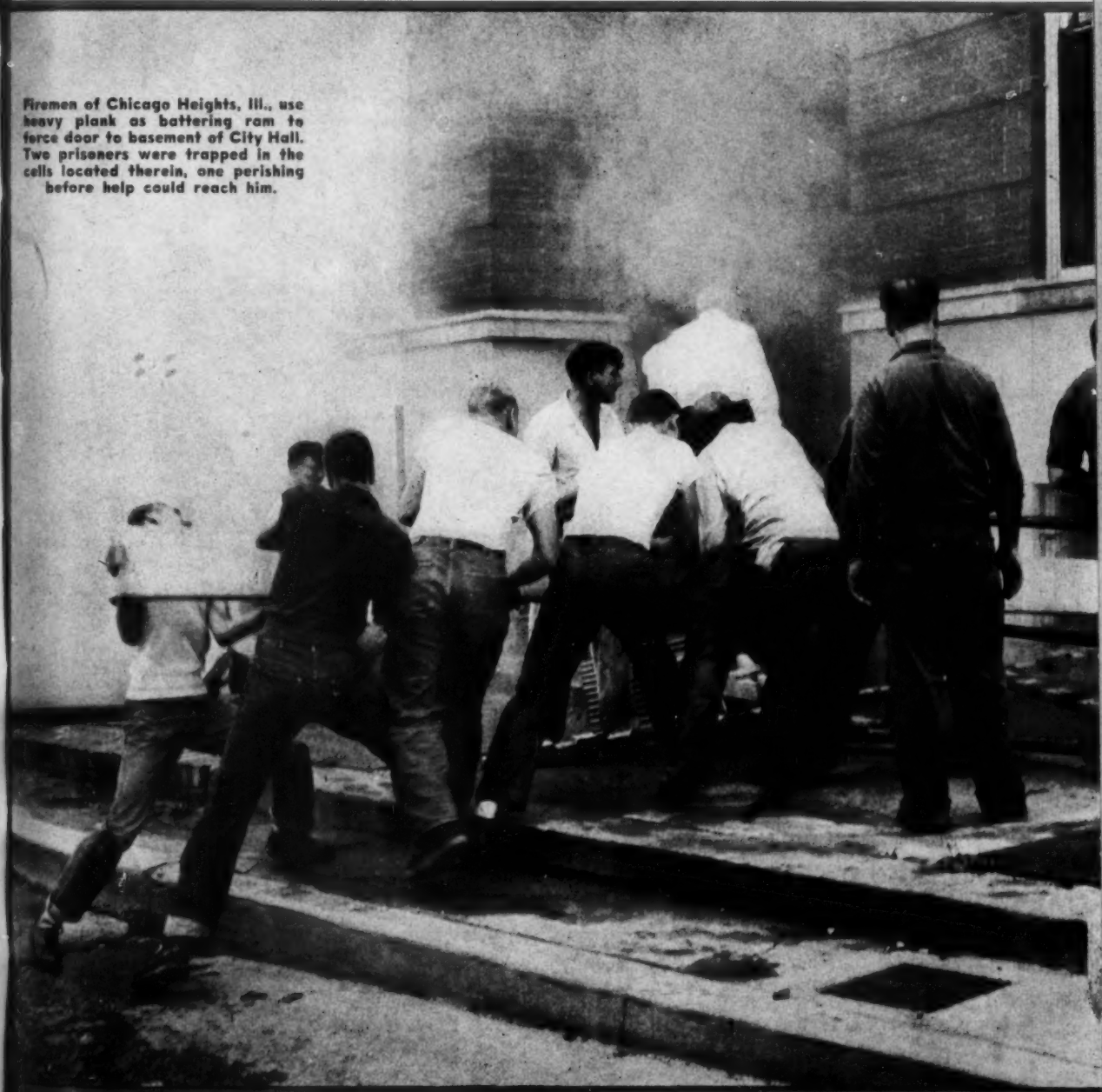
FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

NOVEMBER, 1953



Firemen of Chicago Heights, Ill., use heavy plank as battering ram to force door to basement of City Hall. Two prisoners were trapped in the cells located therein, one perishing before help could reach him.

A CASE · SHEPPERD · MANN PUBLICATION

New . . . Illustrated Booklet on Resuscitation

It is not necessary to move an injured person, except that the head and neck must be extended enough to permit the free passage of air through the windpipe. A recommended position is illustrated.
The rescuer watches his patient. He observes the face and the color of the lips (through the transparent mask). From time to time he looks at the eyes and feels for the pulse (at the carotid artery).
Pulling the patient's chin out and forward straightens the windpipe.
Controls within easy reach of the rescuer's hand.
Turning the head to one side allows drainage of fluids from the corner of the mouth.
Aspirator and airway ready for use if needed.
If a coat (or the like) is placed under the shoulder blades, it helps to expand the chest and straighten the windpipe.

If you use an Emerson
write at the earliest opportunity
for your copy
with the compliments of

J. H. EMERSON COMPANY

88 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

The CHIEF needs FEDERAL PROTECTION *too!*

FIRE CHIEF'S Chevrolet Sedan of City of San Leandro, California, showing installation of Federal Beacon Ray Light & Model Q Siren.

While everyone now recognizes that fire apparatus needs the best possible warning signals, too often the Chief's car is underequipped in this vital protection. Yet this car carries key personnel and sees more service, in both time and area covered, than any other vehicle in the department. It goes out on every fire, covers the entire town, often through the heaviest traffic, and is "on the go" 24 hours a day.

As a V.I.P. vehicle, it needs *outstanding* light and sound warning signals for protection. The BEST protection, for the Chief's car as well as for massive fire apparatus is the Federal Beacon Ray light and the Federal Q siren. The Federal Beacon Ray light flashes 360°, all-around protection that can't be ignored in the densest traffic. The Federal Q siren is the loudest on the market, a siren that carries through winter-closed windows for long distances ahead. The combination of these two fine signals is the *very best* for protection of all emergency vehicles.

CHIEF'S CARS *deserve* the finest . . . be sure they have it with FEDERAL.

FEDERAL ENTERPRISES, Inc.

Formerly: Federal Electric Company, Inc.

8702 SO. STATE STREET **CHICAGO 19, ILLINOIS**

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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MEMBER
Audit Bureau of Circulations
Associated Business Publications

We Keep the Pace!

THE family of the fire service is getting to be quite a group now! Counting paid, part-paid, call, volunteer and industrial and federal firemen, that family has grown to well over 1,100,000 persons!

● New fire companies and departments are springing up all over the country, from crossroads you couldn't find on yesterday's population map, to the private plant brigade in that new big atom industrial development that has just blossomed out in..... (name censored).

● And keeping pace with this growth, is the gratifying increase in new fire fighting devices, and in the method of employing them in modern fire attack and suppression.

New Feature

● A pretty good inkling of the need of these new improvements will be found in the first part of a new series of studies on the "principles and practices of ventilation" in this issue!

● Our great and growing fire service has a great and growing problem—in fact, many of them, if it is to prevent that threatened billion - a - year - fire - loss which is already being prophesied.

● It is gratifying to know that the main reliance of this vast family of the fire service for fact-finding and fact-giving information on the whole complex subject of fire protection and prevention continues to be FIRE ENGINEERING.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th Street, New York 18, N. Y., also publishers of *Water Works Engineering, Wastes Engineering*, etc. ¶Subscription price: United States and Canada, $3.50 a year; Pan-American and Foreign, $4.50; Single Copies, 40c. ¶Member of Audit Bureau of Circulations and Associated Business Publications, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 5, 1879. ¶Contents of this issue copyrighted, 1953, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Eastern Representatives, WILLIAM J. GIBSON, ALFRED J. HOUGHTON; CHICAGO OFFICE: L. M. ROCHE, CHARLES E. RUSSELL, 8 So. Dearborn St., Chicago 3, Ill.; LOS ANGELES: AUGUST HAUBIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U.S.A.

A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

FABRILON

No other hose but FABRILON gives you this. The extreme compactness of FABRILON as compared to ordinary plain-weave hose is immediately evident. The great *strength* of FABRILON and how it is combined with *Light Weight*, *Flexibility* and *Compactness* is a story of efficient combination of high grade materials so as to produce maximum performance. Pound for pound there is roughly *twice the strength*, *wear* and *service* built into the compact FABRILON coil above as compared to the heavier, bulkier, white plain-weave hose.

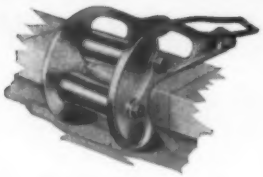
FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

SANDY HOOK CONNECTICUT

IN CANADA BICKLE-SEAGRAVE, LTD. WOODSTOCK, ONTARIO

PRODUCTS ENGINEERED AND DESIGNED TO FIGHT FIRES!

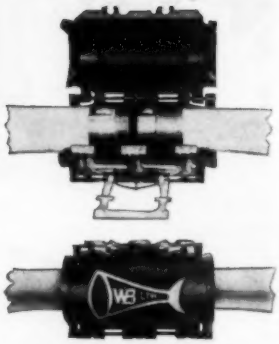


HOSE ROLLER

Constructed of Wooster-lite alloy with bronze bushing and cold rolled steel pins and rope hook. This roller weighs less than 10 lbs. It is 13" long and 8" wide and high. Most departments are now specifying this hose roller on all their pumper specifications as well as ladder trucks.

TRUMPET HOSE CLAMP

Extremely light, self-locking, quickly attached, easy to shut down charged line without extra pressure surge. Opening is steady and controlled.



TRUMPET HOSE JACKET

The Wooster-lite alloy used in this jacket will not crack or break in service. The liner of tough, live synthetic rubber is so constructed that under pressure all joining edges are sealed tight. Spring latch snap locks shut positively with one easy motion. Available in 1½" and 2½" sizes.

UNIVERSAL TRUMPET SPANNER

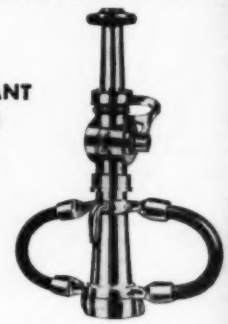
In addition to having the tapered head which fits all types of lugs on couplings from ¾" thru 4", this wrench has a very efficient "jimmy" and gas cock shut-off key.

UNIVERSAL HYDRANT WRENCH AND SPANNER

This wrench head is designed to take all types of pentagon, octagon or square hydrant nuts, since the screw handle is adjustable to compensate for size. The spanner hook takes all couplings from ¾" through 4".

LITTLE GIANT PLAY PIPE

(PGL-BN-T5R)



With cushion ball shut-off and 6" std. threaded tip and rubber bumper.

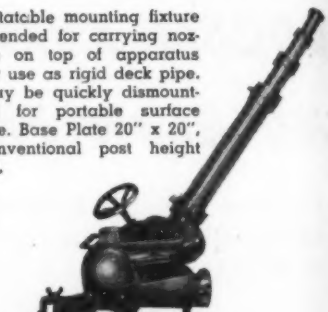
OSCILLATING HYDRANT PUMP

An ideal, inexpensive hydrant pump which can be relied upon to always work regardless of weather conditions. The base of the pump is adapted to fit and lock on any pentagon or square hydrant. The stainless steel shaft resists scoring, pitting, and corrosion.

GEYSER TURRET NOZZLES

Operate safely at lower elevation ranges than other portable units. Fully adjustable elevating range. Can be turned in complete circle horizontally.

Rotatable mounting fixture intended for carrying nozzle on top of apparatus for use as rigid deck pipe. May be quickly dismounted for portable surface use. Base Plate 20" x 20", conventional post height 4".



WOOSTER BRASS

WOOSTER, OHIO

A DIVISION OF THE FYR FYTER COMPANY

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

B.F.Goodrich hose stays flexible, even under top pressure

WHEN water is pounding through fire hose under highest pressure, no hose handles as easily as B.F.Goodrich Fire King.

Fire King is 15% lighter, much more flexible than other hose, due to a chemically-produced fiber, which is used in B. F. Goodrich hose as "filler cords"—the reinforcing cords that go *around* the hose and carry the load under pressure.

What's more, Fire King can stand up under higher pressures, especially in the coupling area where blowouts and cracks occur in ordinary hose. Actual service tests prove that B. F. Goodrich Fire King, tested to 600 pounds pressure, is 50% stronger than standard hose, which is tested to only 400 pounds pressure.

Chief Jonathan F. Cox, of Haddon Fire Co. No. 1, Haddonfield, N. J., (at right, above) says: "We've tried many different makes and find B. F. Goodrich Fire King the best of all we have used."

Next time you plan to replace or add hose, let a BFG Fire Hose Distributor show you a sample of Fire King. Compare it with your present hose and see for yourself why Fire King is your smartest, most economical buy!

The B. F. Goodrich Company
Dept. M-76, Akron 18, Ohio

Without cost or obligation, please
- ☐ send me more information on B. F. Goodrich fire hose.
- ☐ have a BFG Fire Hose Distributor see me.

Name_____

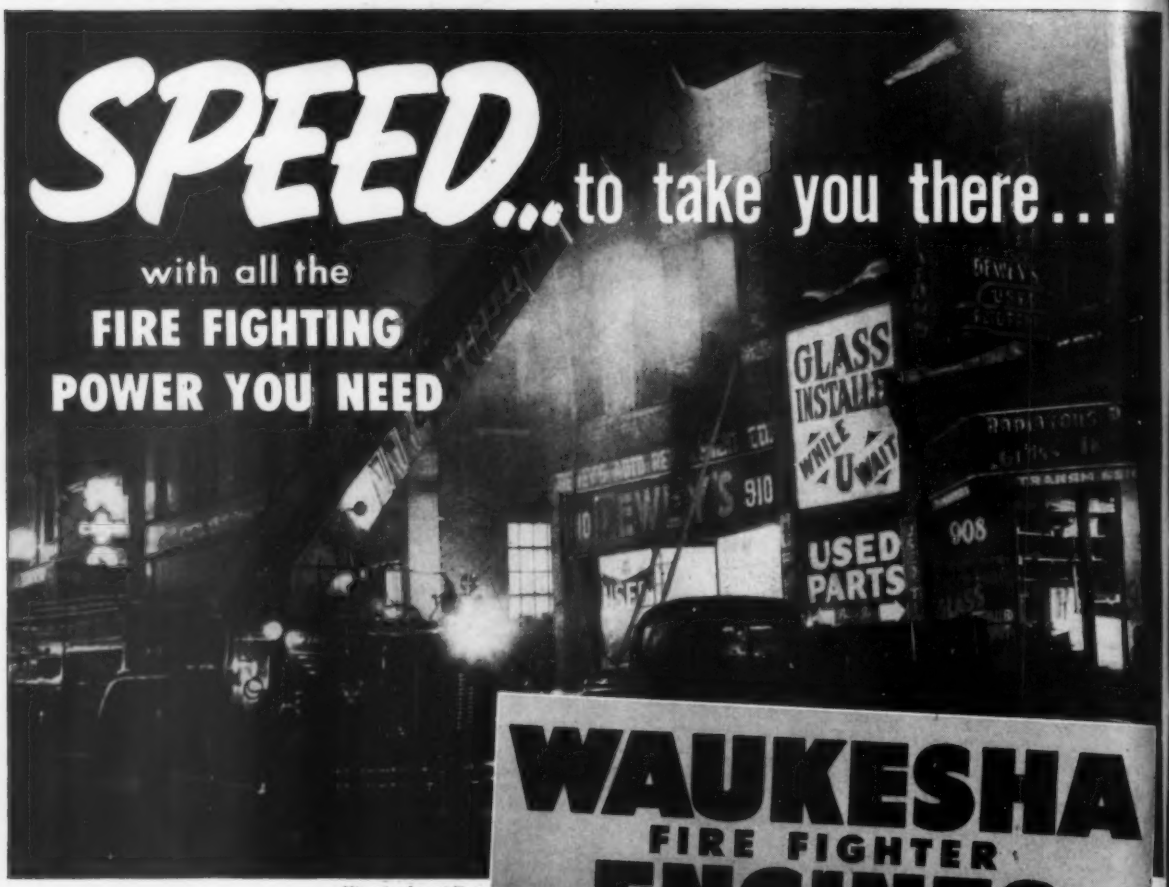
Department_____

Address_____

B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

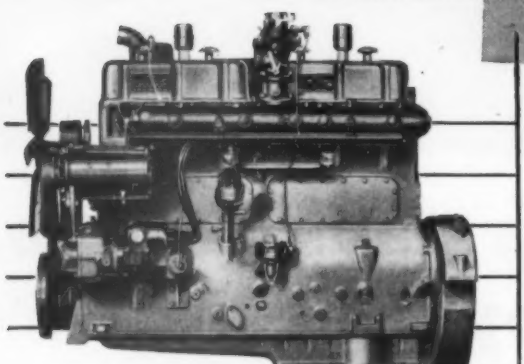
SPEED... to take you there...

with all the
FIRE FIGHTING POWER YOU NEED



Milwaukee Journal Photo

WAUKESHA FIRE FIGHTER ENGINES



WAUKESHA 145-GKB High Output FIRE FIGHTER Engine — six-cylinder 5¼-in. bore x 6-in. stroke, 779 cu. in. displ.; develops 240 hp. at 2400 rpm. Arranged for full electrical equipment and all modern accessories.
Send for Bulletin 1594.

- **Dual Ignition**
- **3½-inch, 7-bearing Hardened Crankshaft Counterbalanced and Vibration Dampened**
- **Precision, Extra High Capacity Bearings**
- **Full Pressure Lubrication**
- **Overhead Valves with Stellite-faced Exhaust Valves and Seats**
- **Removable Wet Sleeve Cylinders**
- **and every wanted fire engine feature**

WAUKESHA MOTOR CO., WAUKESHA, WIS.
NEW YORK TULSA LOS ANGELES

202

Waukeshas power Pirsch Aerial Ladder Trucks, both 4 and 6-wheel types; and Pirsch Pumpers.

When this happens to your hat—

What happens to YOU?

Chief H. L. Baldwin, Kansas City, Can Tell You!

You never can tell—when you're groping your way through smoke-filled rooms—when you'll bump your head on a hot electrical wire or charged metal. What happens then depends a lot on what kind of a hat you are wearing . . . as Chief H. L. Baldwin can tell you.

"I was wearing a hat that WASN'T a non-conductor and came in contact with a "hot" wire. It felt like I tore my head off. I got rid of that helmet in a hurry.

"We've since had numerous cases of fire-fighters coming in contact with electric wires while wearing non-conducting helmets. There were no resulting shocks."

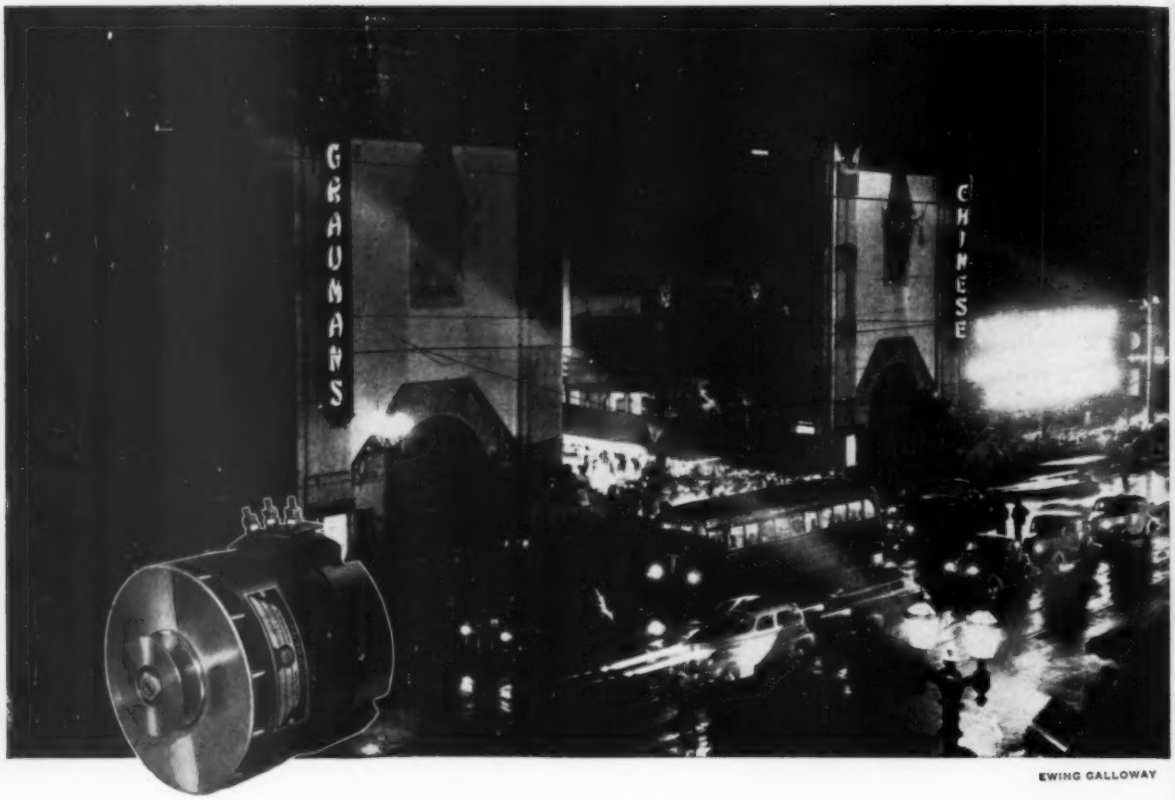
You're doubly protected when you wear an M.S.A. Streamlined Fireman's Helmet. Its high dielectric strength safeguards against electrical hazards—and because the laminated bakelite is non-absorbent, this protection isn't affected by moisture conditions. The one-piece, high pressure molded construction takes bumps and blows without passing them on. (Many reports on record such as: a brick fell 45 feet and hit an M.S.A. helmet. No injury to the wearer—only a slight scratch on the helmet.) And finally, the streamlined design has eye appeal, and the rubber-cushioned lining provides greater wearing comfort. Easily zipped-in winter lining assures all-weather comfort. Ask for Bulletin DX-8, for full details.

Chief H. L. Baldwin wearing his shock-proof M.S.A. Helmet. The Kansas City, Mo., department has standardized on this proved head protection.

MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue, Pittsburgh 8, Pa.
At Your Service: 82 Branch Offices in the United States and Canada
Representatives in Principal Cities in Mexico, Central and South America
Cable Address: "MINSAF" Pittsburgh

Call the M.S.A. man on your every safety problem . . . his job is to help you

MSA
SAFETY EQUIPMENT HEADQUARTERS



EWING GALLOWAY

Recognized Everywhere...

L-N CUSTOM-ENGINEERED ELECTRICAL EQUIPMENT

YOU CAN RELY ON Leece-Neville

WHEREVER YOU LIVE, you recognize this view in Los Angeles, a great city, famed for its movie making. And Los Angeles recognizes the Leece-Neville Alternator... it is doing a great job every day on that city's fire equipment.

Los Angeles is just one of many cities where Leece-Neville Alternators are helping fight fires and save lives. You'll find them in New York, Cleveland, Denver, Dallas, Montreal, Quebec and hundreds of other cities, large and small, here and abroad.

It's easy to find the reason for this wide acceptance of the L-N Alternator. More than seven years of performance on many thousands of vehicles has proven the advantages of the Leece-Neville Alternator System in place of the conventional d.c. generator.

Two-way radio operation is surer and clearer... when seconds count, that's vital! With 25 to 40 amperes idling and full current output from 18 m.p.h., siren, lights, radio and other accessories are carried by the Alternator, saving the battery for starting only.

Installation of a Leece-Neville Transformer with the Alternator gives your equipment a source of 110 volt power. You can plug in standard flood lights, search lights, portable saws, drills and other hand tools. Send for special Transformer folder.

There are L-N Alternators for 6 volt systems with capacities to 95 amperes; for 12 volt, up to 180 amperes; and for 24 volt, to 80 amperes. Be sure to specify Leece-Neville Alternators on your new equipment. Write The Leece-Neville Co., Cleveland 14, Ohio. *Custom-Engineered Electric Equipment Since 1909.*

L-N Alternators proved by performance for over 7 years

JOHN BEAN

adds a new dimension to firefighting

the new combined true high-pressure fog and volume fire-fighter

Fast-striking high-pressure fog backed up by slugging volume power now makes it possible for you to fight fires as never before. Bean engineers add this greater dimension to firefighting techniques with their new combination high-pressure fog and volume fire-fighter. It boasts the biggest firefighting wallop ever packed into one unit. Two famous Bean pumps (operating simultaneously or separately) offer you the chance to attack the fire with 2 high-pressure and 4 volume lines. A 500-gallon tank allows you to start pumping seconds after you arrive at the scene. You can get in fast and keep slugging for a "quick kill."

Besides this new approach to firefighting methods, Bean engineers have fashioned a streamlined, sleek-looking truck with a low center of gravity for safe riding at high speeds. 5 full-size compartments furnish more than 45 cubic feet of storage space for supplementary equipment. A rear fill hopper with an easily removable strainer makes filling a simple operation. For fighting grass, prairie, or other running fires, both high-pressure lines can be used while the truck is in motion.

OUR BEST SALES TALKS COME FROM THE CHIEFS WHO USE BEAN FIRE-FIGHTERS

Write these men for their opinion of the unit.

Fire Chief Eugene Davidson—Bedford, Penn.

Fire Chief R. L. Henry—Annandale, Virginia

JOHN fmc BEAN

TWO-FISTED FIRE-FIGHTERS

Can be mounted on most standard truck chassis

John Bean Division
Dept. 126
Lansing 4, Michigan

John Bean Division
P.O. Box 145
San Jose, California

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

IT'S TOPS

... the noticeably better performance of American Fire Hose is the natural result of skillful, painstaking manufacture. American does not compromise with quality—as a result critical buyers eventually standardize on American.

LAMINATED CONSTRUCTION

5 ... calendered sheets

CRACKERJACK

MUNICIPAL FIRE HOSE

OTHER AMERICAN BRANDS

WHITE	*TREATED
Crackerjack	Crackerjack-Arcolized
American	American-Arcolized
Municipal	Municipal-Arcolized
Tiger	Tiger-Arcolized
Underwriters	Underwriters-Arcolized

Fully guaranteed against mildew and rot; water repellent.

FLEXIBLE . . . balanced weave and premium yarn assure greatest strength and flexibility.

SMOOTH WATERWAY . . . lowest possible friction loss.

DEPENDABLE . . . unsurpassed for ruggedness and long life.

LOWEST COST PER FOOT PER YEAR

ASK FOR BULLETIN

THE *American* RUBBER MANUFACTURING CO.

FACTORY & General Offices: 1145 Park Avenue, Oakland 6, California. Phone: Olympic 3-0800

Branch Offices: SEATTLE, Smith Tower. Phone ELiot 1727
PORTLAND, Delzen Building. Phone CApitol 1708
SAN FRANCISCO, 7 Front St., Phone SUtter 1-6068
LOS ANGELES, 711 E. Gage Ave., Phone ADams 1-9275

THE AMERICAN RUBBER MFG. CO. OAKLAND CALIF.

Write for name and address of your nearest American Distributor

NEW WARD LA FRANCE PUMPER now seeing service in Schenectady, N.Y. Nearly 300 years old, the city is a flourishing industrial center of well over 91,000. Its industries manufacture electrical products, locomotives, paint, insulation, many other products.

Schenectady, N.Y. selects Ward LaFrance

Schenectady, N.Y. — "The city that lights and hauls the world" . . . has a record of which any city could be proud. Over the past eight years, it has won seven national awards for fire prevention.

Schenectady's interest in fire prevention is well illustrated by this Ward LaFrance Pumper. The pumper, a 1,000-gallon capacity model, was recently delivered to the city. Its 260 H.P. enables it to deliver the weight-to-horsepower ratio necessary for fast get-aways and hill-climbing.

The new Ward LaFrance Pumper is equipped with electric push-button priming to provide fast, positive priming. Its pump is direct connected with the deck gun. The deck gun may be fed through permanently installed piping from the pump, or through Siamese connectors conveniently located on each side of the apparatus.

SELECT WARD LA FRANCE YOURSELF Why not let Ward LaFrance modernize your fire department with new, ruggedly-built apparatus. Call in the Ward LaFrance representative in your area. He'll help you choose the equipment that fits your community's needs.

Upstate New York Agent

Gus G. Jacobs, District Manager
White Plains, N.Y.

WARD LaFRANCE
TRUCK CORPORATION
Fire Apparatus Manufacturers for over 30 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue
Elmira, N.Y. Tel. 3-5631

DIRECT FACTORY BRANCH: 139th Street & Bruckner Blvd.,
New York 54, N.Y.
Tel. CYpress 2-3300

EXPORT: Ward LaFrance International, Inc.,
Elmira, N.Y., U.S.A.
Cable Address: "Wardtruck"

for RUGGED DUTY !

MIDWESTERN PROTECTIVE CLOTHING

The overwhelming preference for Midwestern Protective Clothing is the result of outstanding performance when the going is tough and the chips are down. The superior quality, design, fabric texture and many exclusive features found in Mackinaw Coats and other Midwestern garments help increase your department's efficiency and provide extra protection for your men at the scene of the blaze. There is no substitute for the expert workmanship, built-in comfort and longer wear you get by specifying Midwestern.

PROTECTION—COMFORT—SERVICE

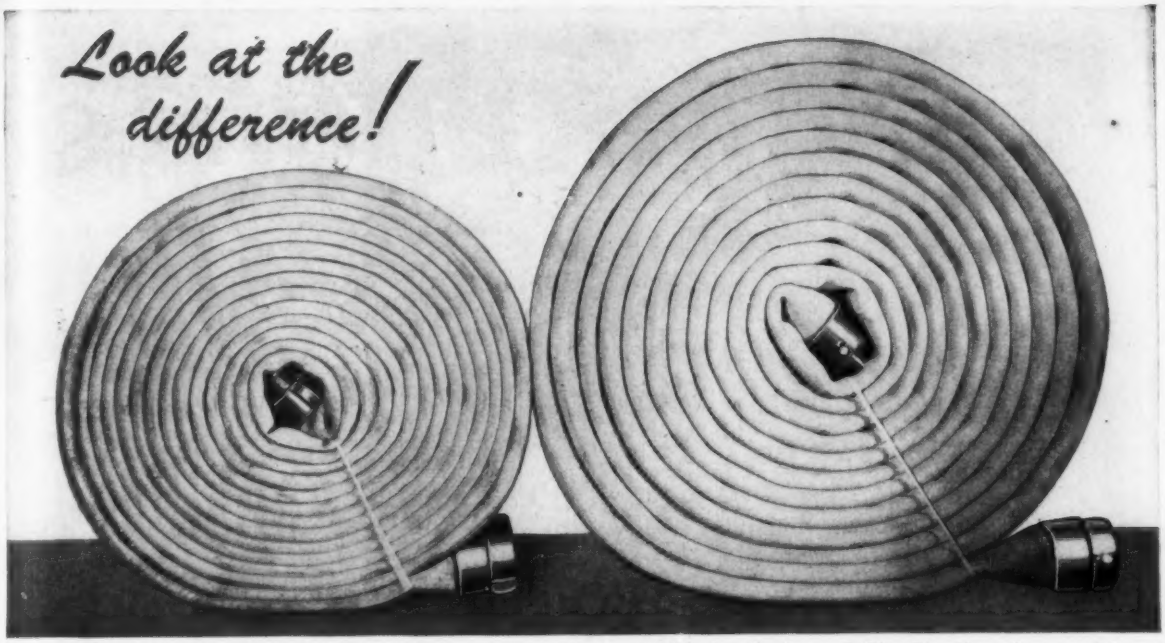
You will find the type of fabric exactly suited to your needs in our wide selection of rubber materials. You can absolutely depend on the softness and flexibility of these high grade materials to meet your most exacting requirements for lasting comfort, rugged service and greater efficiency on the job.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**



Above photo emphasizes pronounced savings in storage space between a 50 ft. length of new LaFlex Fire Hose shown at left and a 50 ft. length of ordinary Fire Hose shown at right.

New LaFlex Fire Hose

WITH SYNTHETIC FIBRE FILLER, MORE FLEXIBLE, LIGHTER, USES LESS SPACE

The American-LaFrance-Goodyear LaFlex "All-Weather" double-jacket Fire Hose is made by the Goodyear Tire and Rubber Company, for the American-LaFrance-Foamite Corporation.

LaFlex Fire Hose high lights every desirable feature of an outstanding fire hose; *flexibility, lightweight, small storage space* requirements, great double-jacket strength and ruggedness. This combination of unusual features is obtained by combining a new man-made synthetic fibre with high grade cotton fibres into balanced hose jackets.

Compared to conventional cotton, this new fibre is exceptionally light in weight in proportion to its strength and is, therefore, utilized in the filler section of the jackets for superior hose strength. Cotton, because of its ability to withstand wear and abrasion, is used for jacket warp in order to provide the ultimate in practical wearability.

Due to its greater flexibility, it will *coil on a smaller diameter* than conventional hose and thus permit maximum use of storage facilities.

The LaFlex is a water-repellent *White* Fire Hose. Both hose jackets are doubly treated with All-Weather water repellency to insure that all fabric is thoroughly impregnated. This All-Weather process is believed to be the most effective water-repellent treatment known to the industry.

The famed Alaseptic treatment for inhibiting the deteriorating action of mildew is applied at the same time that the fire hose undergoes All-Weather processing.

Seamless inner tubes are provided with special backing to insure a firm bond between the inner tube and the jacket, thus producing a smooth, noncorrugated waterway throughout the length of the hose.

Smooth waterways speed the flow of water without noticeable friction loss of fire-fighting capacity.

LaFlex Hose is flat cured in special mold equipment. During the curing of the seamless tube it is in the position it will occupy during its entire life, except when in use.

Write for illustrated literature, or to have salesman call.

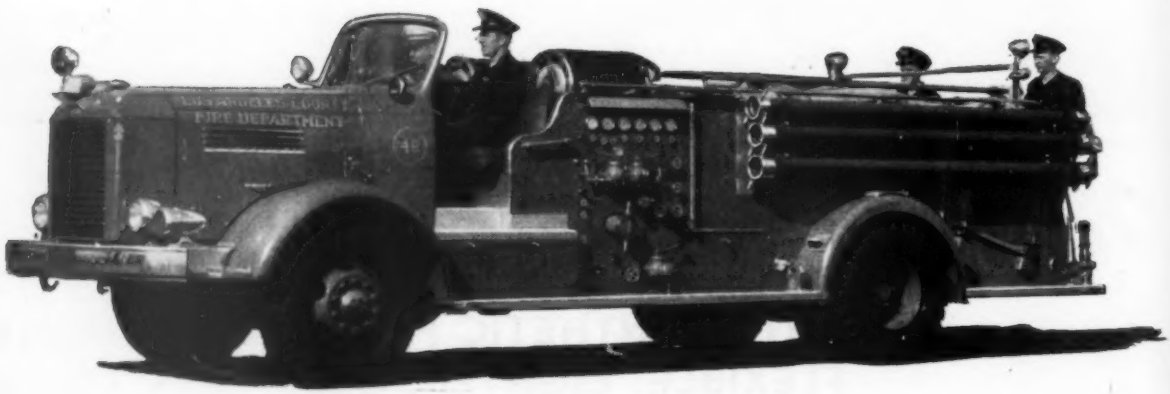
OUR 2nd Century of Leadership in FIRE PROTECTION

AMERICAN-LAFRANCE-FOAMITE Corporation

ELMIRA · NEW YORK · U.S.A.

ALFCO

Fire fighters with extra wallop



This INTERNATIONAL fire truck chassis is powered by a 245 h.p. engine. GVW rating, 30,000 lbs. 5-speed transmission. Carries complete firefighting equipment—1,000 GPM pump, 500-gallon water tank, ladders, and hose.

INTERNATIONAL fire truck chassis are designed not just to meet—but *exceed* every fire department requirement.

They have an extra margin of toughness, speed, flexibility, and safety. This is the result of the tough-job engineering that has made INTERNATIONAL Trucks the heavy-duty sales leader for 21 straight years.

INTERNATIONAL fire truck chassis deliver all the specialized performance you need for fire fighting *plus* proved long life and lower maintenance costs.

To meet your needs, there are seven INTERNATIONAL fire truck chassis. There are eight engines. And a range of pumping capacities from 500 to 1250 GPM.

Ask your INTERNATIONAL Dealer or Branch for full details.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

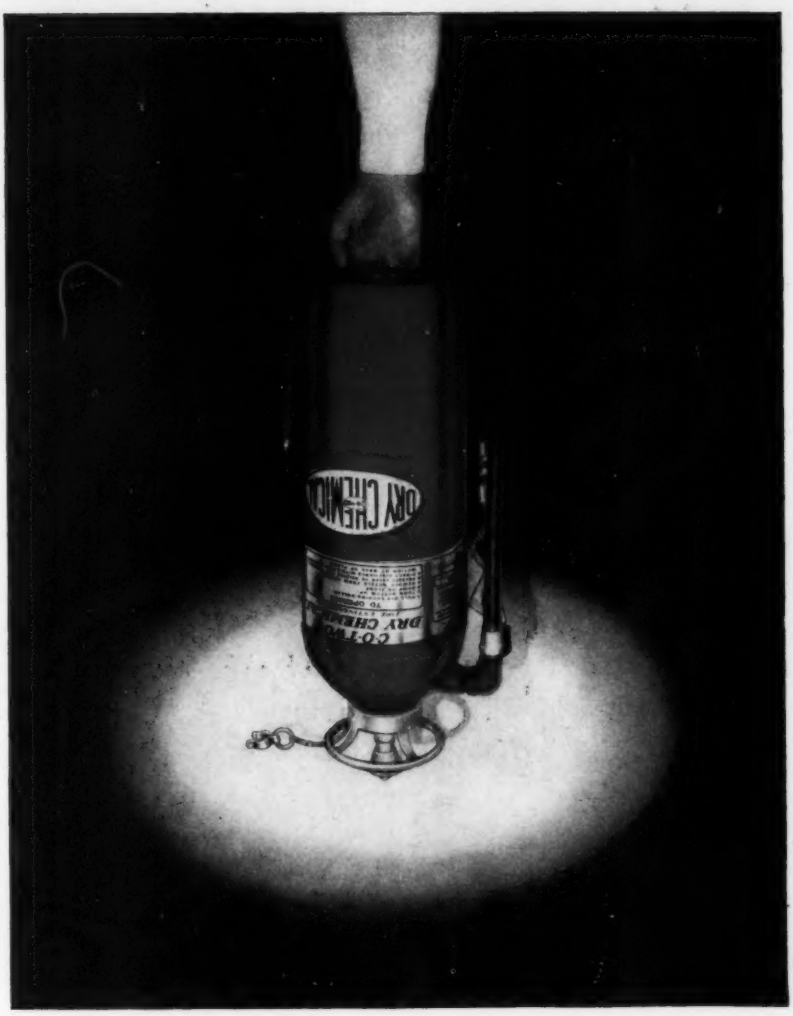
International Harvester Builds **McCORMICK**® Farm Equipment and **FARMALL**® Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL® TRUCKS

"Standard of the Highway"

Bump that assures positive results



When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bumping is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 • NEW JERSEY

C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

MAXIM *fire* APPARATUS

DESIGNING and building fire apparatus that will be modern for years to come—putting into each job the experience gained in over sixty-five years of building equipment—assures any fire department that they've got the best the field affords when they choose MAXIM.

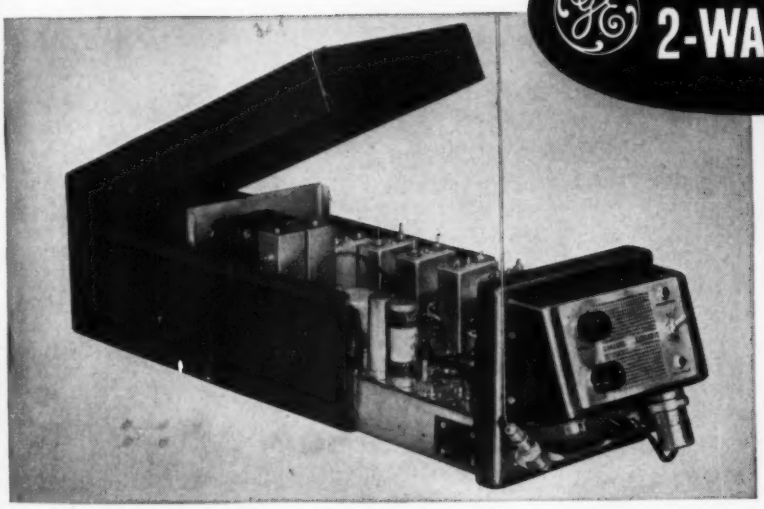
- 85-foot, all steel, hydraulic controlled ladder. One man central control with automatically neutralizing levers.
- Permanent tiller seat with steering exactly same as front end.
- Single release for automatic mechanical jacks.

MAXIM MOTOR COMPANY MIDDLEBORO, MASS.

General Electric Announces a

NEW ADVANCED 2-WAY RADIO DESIGN

Low Power Industrial
2-WAY RADIO



Remove just 4 screws . . . control head is dismounted for flexibility of application!

- **Lowest current drain in standard use today!**
- **6/12 . . . 28 to 40 . . . or 117 volt operation!**
- **Mobile units are interchangeable with station equipment!**
- **Adds multiple new applications!**
- **Extremely compact!**
- **Sensitive . . . selective . . . has clear, crisp audio!**
- **General Electric engineered for the materials handling function!**
- **Weather resistant!**

THE basic intent behind General Electric development of this new mobile unit is to enhance the value of radio in your industry's operations. In it you see features that are head and shoulders above all other low power industrial radio equipment. With it your work will be performed faster and better *regardless of your business requirements!* Whether you want more miles of pipeline serviced . . . more crops harvested at the right market time . . . more emergencies avoided or solved . . . or more customers served . . . you will get more industrial productivity at lower cost than ever before. In these and many other fields G. E. has opened new, broader avenues of radio application! Investigate its advantages to you today!

YOUR CAS* MAN...
has complete information on the new LPI equipment. Take advantage of the service he offers at a local G-E office today or send us this coupon!

**Communications Advisory Service*

1878 75 1953 YEARS OF ELECTRICAL PROGRESS

General Electric Company, Section 59113
Electronics Park, Syracuse, New York

Please send me the new G-E LPI Radio literature describing features and specifications.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....STATE.....

GENERAL ELECTRIC

When Seconds Count! . . .

Count on

DUO Safety

FIRE LADDERS

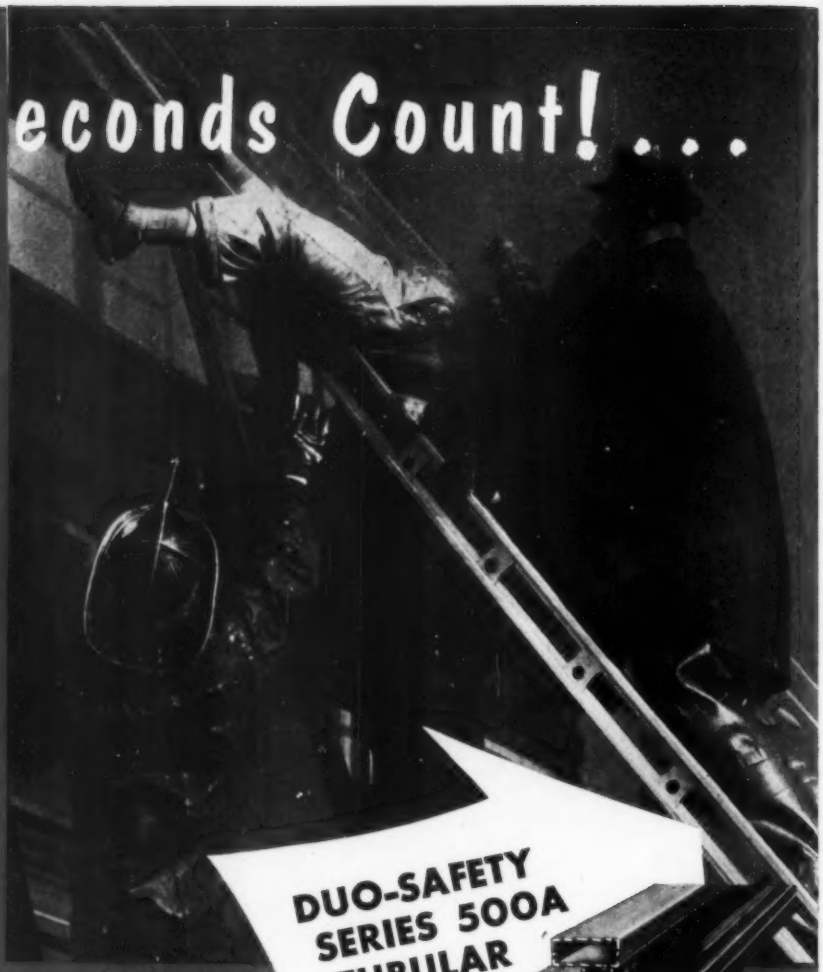
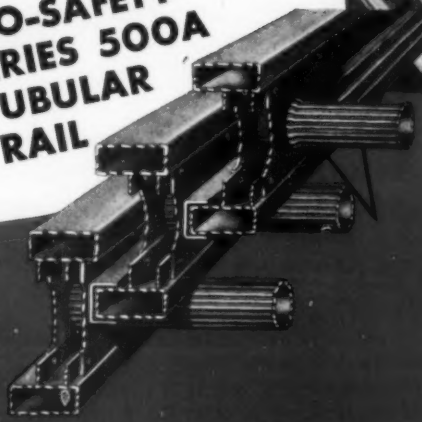


PHOTO BY
PH·LA FIRE DEPT.

DUO-SAFETY SERIES 500A TUBULAR RAIL



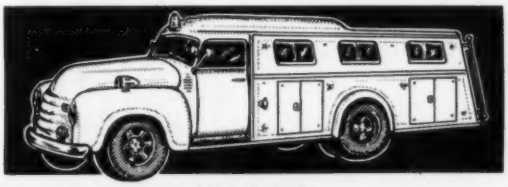
Here's the proof, in action, of the superior quality, safety and dependability of the famous Duo-Safety line of aluminum fire ladders. The ladder in the above photograph, playing such an important part in the rescue of an unconscious victim, is the Duo-Safety 500 Series Tubular Rail Model. Note how straight and sturdy the rails remain, even under extreme weight. Note, too, that the absence of any projections or sharp, jagged edges provides a smooth rail surface to permit sliding the victim down safely and rapidly. Yes . . . you can count on all ladders in the great Duo-Safety line for the kind of performance that only highest quality delivers. Write today for free, colorful file catalog giving complete information.

DUO-SAFETY LADDER CORP.

809 NINTH STREET, OSHKOSH, WIS.

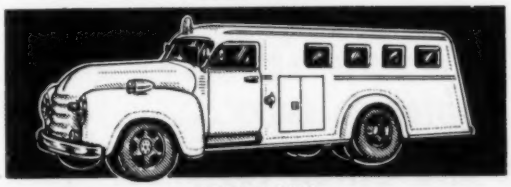
THIELE

Customizes to meet the most exacting demands.

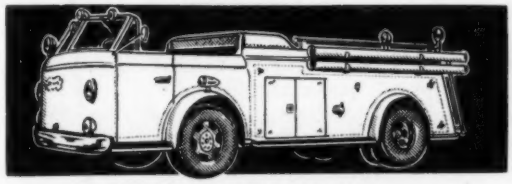


SQUAD CAR

FIVE-MAN CAB



RESCUE VAN



FORWARD-CONTROL UNIT

Let THIELE design and build for you the ultimate in durable, economical fire apparatus. Mounted on any commercial chassis employing volume pump, high pressure fog or both. THIELE will customize your equipment to meet your specific needs.

Discover why more and more towns are buying THIELE fire trucks and apparatus. Join those users of THIELE equipment that have experienced the satisfaction of owning a fire truck that is *durable, functional* and *economical.*

• PROMPT DELIVERY!

THIELE!
Originators & Builders of the "Fog-Kar"

A Recent Delivery . . .

500 GALLON PUMPER 4 Stage—Volume and high pressure fog combination

W. J. THIELE & SONS, Inc. Pine at Cherry **JOHNSTOWN, PA.**

Designers, Manufacturers and Distributors of Truck Bodies and Equipment

NOW...

stronger, more flexible hose

made with

DACRON*

POLYESTER FIBER

It's lighter to carry... gets into action faster

Fire hose that's lighter and more flexible . . . easier to handle . . . yet stronger than ordinary hose of the same diameter! That's the news "Dacron" polyester fiber has made possible. "Dacron" is used as the load-carrying "filling" cord that reinforces the hose. The exceptional strength of this famous man-made fiber, plus its lightness and flexibility, results in a hose that offers strength without bulk . . . that's at least 15% lighter . . . easy to coil and uncoil.

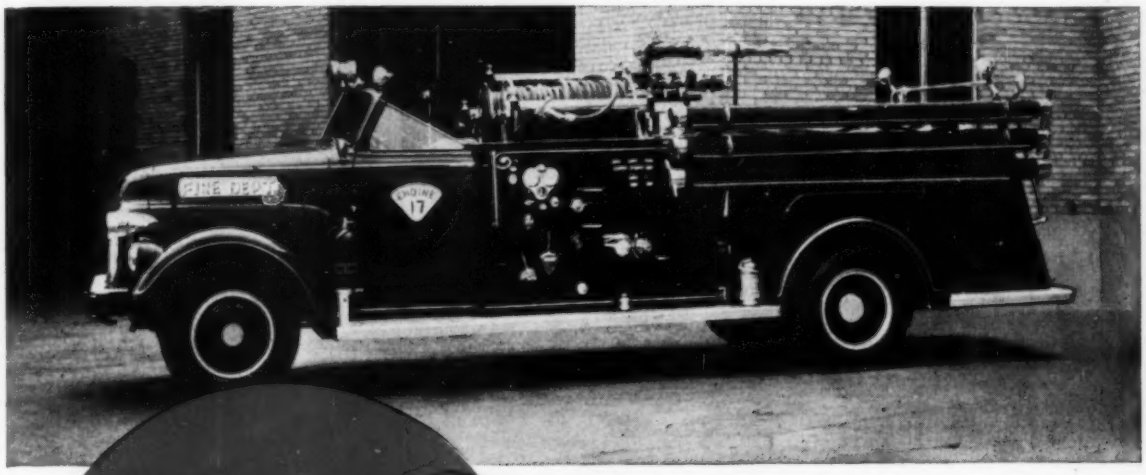
More than two years of field testing have proved the advantages of this new hose in action. It will soon be available in volume. Plan now to take advantage of the performance extras that "Dacron" gives to fire hose. Before you place your next order, be sure to ask your supplier about hose made with "Dacron". E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Wilmington 98, Del. *REG. U.S. PAT. OFF.

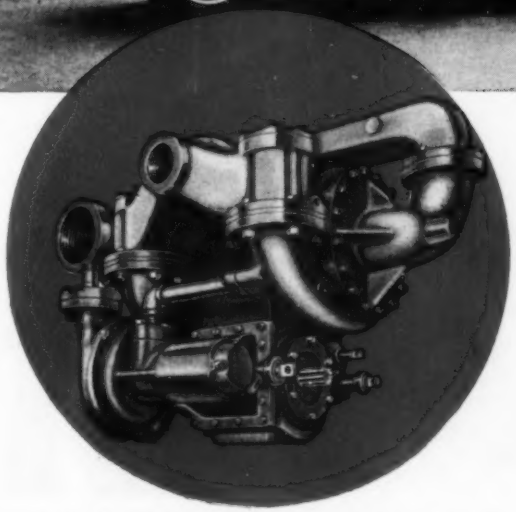
DACRON polyester fiber

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

For power and versatility





THE CITY OF ROCHESTER selects BARTON-AMERICAN

DUPLEX-MULTISTAGE FIRE PUMPS

In completing an apparatus modernization program, the Bureau of Fire, Rochester, New York, recently built four pumpers designed by Deputy Chief Louis E. Vogt.

To get the fire-fighting power and versatility he wanted, Chief Vogt selected Barton-American Duplex-Multistage Pumps . . . a strong testimony to their superiority in design and construction.

At moderate engine speeds, the Duplex-Multistage gives high volume at normal pressure, normal high pressures, and extremely high pressures for fog guns. The impellers are independently shafted and geared to run alone or together. All bearings run in automotive-type transmission housing with one-point lubrication.

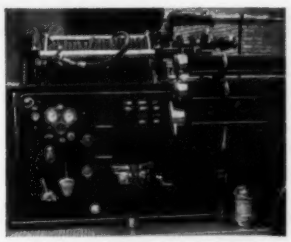
These and other exclusive design features will give *you* extra fire-fighting flexibility, too. Get all the details on Barton-American Fire Pumps. Contact our representative in your area.

WRITE FOR BULLETINS 8733 • 8734

AMERICAN-MARSH PUMPS
BATTLE CREEK MICHIGAN

In Canada:
American-Marsh Pumps (Canada) Ltd., Stratford, Ont.

With handy vacuum clutch control switch on dash, driver shifts power from road to pump before moving from his seat.



Close-up of pump operator's control panel shows how all controls are grouped for fast, efficient operation.

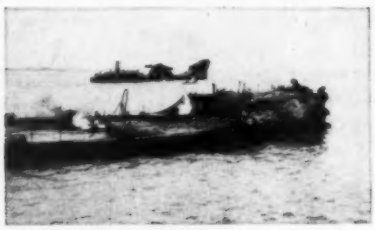
The tanker was in flames with 160,000 barrels of high octane gas aboard!

It ignited when it collided with another tanker in the Delaware River. A ten-man Navy team, from damage control training center, Naval Base, Philadelphia, under the direction of Lieutenant Commander Louis O. Lindeman, came to the rescue in the tug U.S.S. Toka. Using Rockwood fire-fighting equipment, here is what they did:

NAVY FIRE FIGHTERS using a Rockwood FFF FogFOAM Nozzle direct FOAM into the deck and holds of the burning tanker. Note blanket of FOAM on aft deck.

APPROACHING TANKER, Navy Fire Fighters discharge FogFOAM Nozzles on deck of burning tanker extinguishing fire and cooling deck permitting men to board tanker to put out fire in hold.

MEN ON TUG cool tanker deck with Rockwood FOAM discharged from Rockwood 2½" FFF FogFOAM nozzle. Note FOAM on men, protecting them from intense heat.



THE FIRE IS OUT - and 92% of the cargo saved! During fire-fighting, FOAM was also pumped into tanks below deck. Entire operation took 6 hours. Tanker in distance was cause of fire.

GET MORE FACTS about Rockwood equipment by writing for the informative, 12-page booklet "Rockwood Fire Fighting Products." Rockwood Sprinkler Company, Portable Fire Protection Division, 54 Harlow St., Worcester 5, Mass.

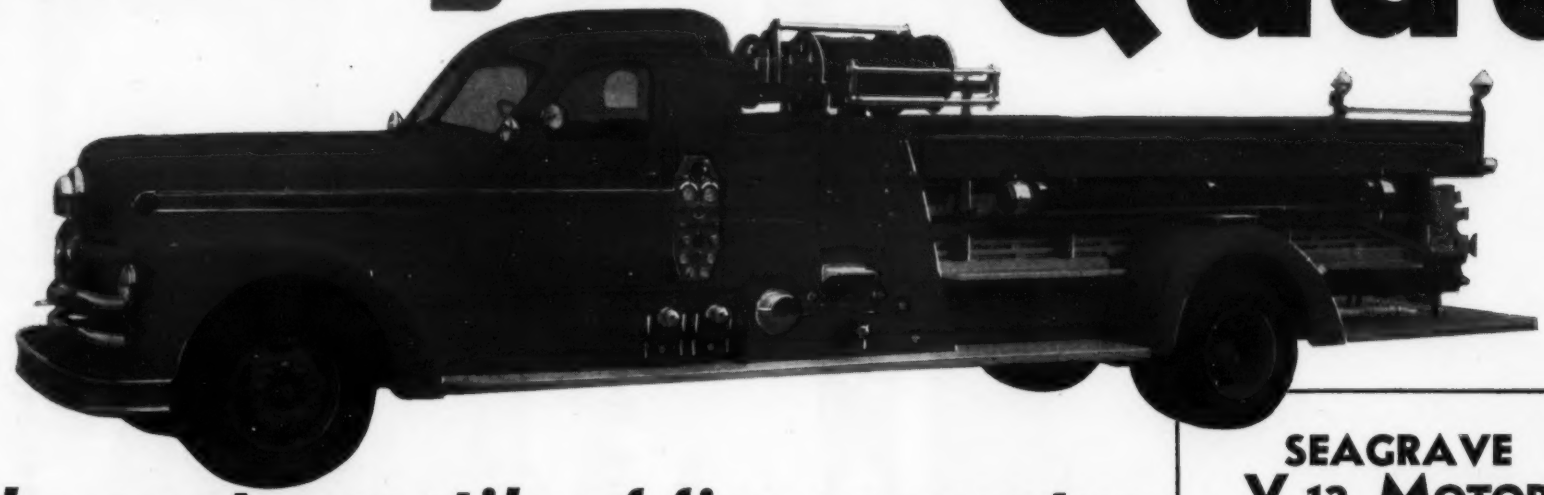
ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

ROCKWOOD

Portable Fire Protection Division

Seagrave Quad



The most versatile of fire apparatus

A combination of hose truck, ladder truck, pumping engine and water tank all on one piece of fire apparatus. And, of course, plenty of storage space for equipment.

The Seagrave Quad is made in three models . . . Seven-Man Canopy Cab . . . Three-Man Cab . . . Semi-Cab.

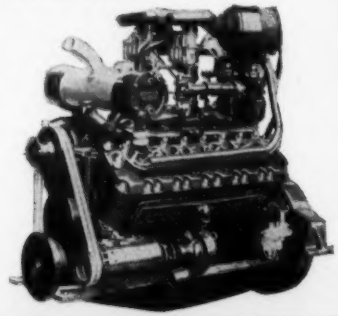
It is equipped with the highly efficient Seagrave Centrifugal Parallel-Series Centrifugal Pump or the Seagrave High Pressure (Fog) Pump. The pump is set deep in the chassis, thereby providing a lower center of gravity and a greater increase in the safety factor.

The motors, the bodies, the pumps, the chassis, the ladders and other important parts of the Quads are all Seagrave design and manufacture. They work together as an efficient unit to give your city the most dependable fire protection at all times.

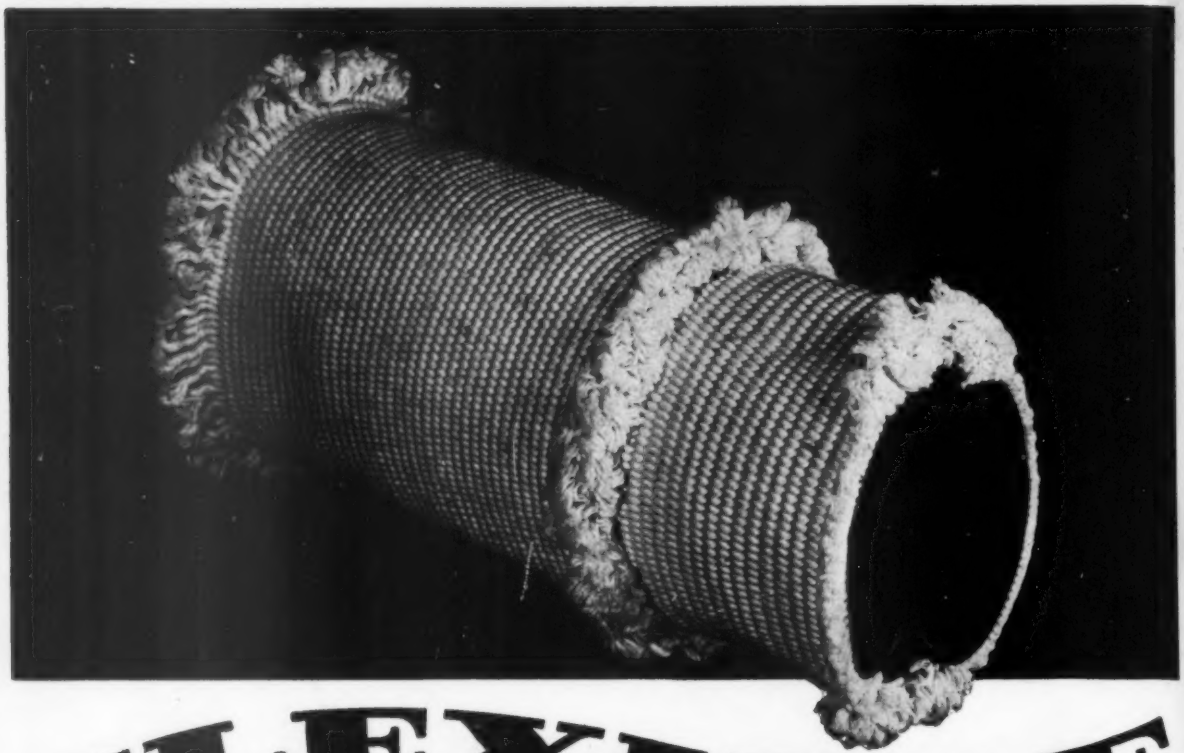
THE SEAGRAVE CORPORATION
COLUMBUS, OHIO
Bickle-Seagrave, Ltd., Woodstock, Ont.

SEAGRAVE V-12 MOTOR

proven throughout the years to be the most efficient power plant for fire service.



Seagrave THE GREATEST NAME IN FIRE APPARATUS



FLEXIBLE

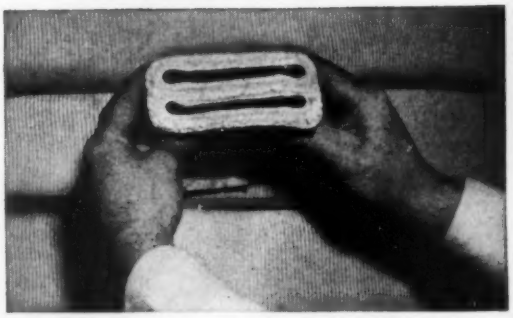
HEWITT-ROBINS

Bi-Roll Municipal Fire Hose

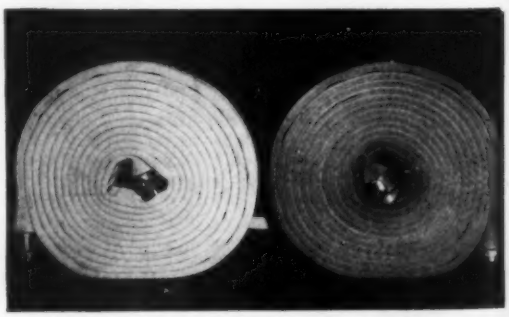
Here's the hose that gives you the flexibility and safety you need for fighting fires . . . Hewitt-Robins Bi-Roll municipal fire hose.

Bi-Roll's greater flexibility means that 30% to 40% more hose footage can be stored or dispensed in a shorter time with greater handling ease and safety.

For complete information about Hewitt-Robins Municipal Hoses . . . Bi-Roll—Chemical Booster—Fog—Suction—Street and Sewer Flushing, contact Municipal Fire Hose Division, P. O. Box 974, Buffalo 5, N. Y.



Bi-Roll . . . provides greater over-all flexibility because of its non-vulcanized point-of-fold construction . . . permits a flatter fold under light pressure . . .



Bi-Roll is available either with or without wax and gum treatment. Treated Bi-Roll provides 100% proof against mildew and rot . . . is equally pliable in hot or cold weather.

HEWITT-ROBINS HR **INCORPORATED**
EXECUTIVE OFFICES STAMFORD, CONNECTICUT

DIVISIONS: Hewitt Rubber • Robins Conveyors • Robins Engineers • Restfoam®

NEW McCULLOCH PORTABLE PUMP

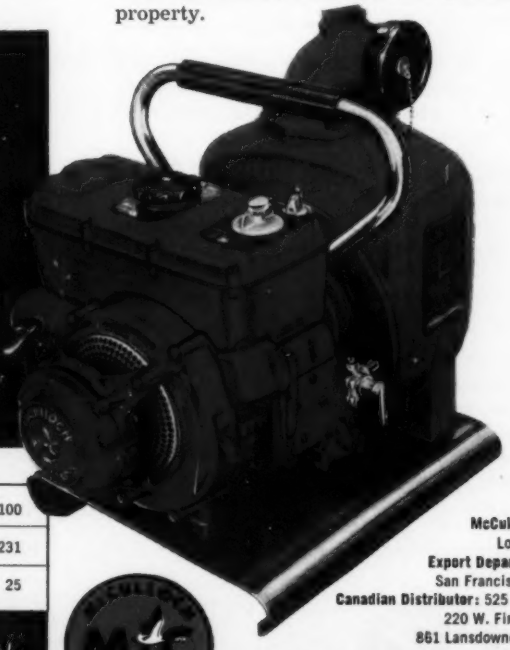
Protects Lumber Mill!

Lumber mill burning! Mill pond is nearby. Emergency fire equipment – a McCulloch 7 FP pump – goes to work with three 50 foot lengths of 1½ inch hose. Two sections of line with ⅜ inch nozzles pour water on the blaze, at 67 psi. The other line, with 5/16 inch nozzle, wets down and protects adjacent property.

Model 7 FP McCulloch

CENTRIFUGAL FIRE PUMP

Weighs only 57 lb. complete!
Delivers 250 gpm!
Develops pressures over 100 psi!
Primes at 25 ft. suction lift!
Delivers fog, stream, or foam!
(all measurements in U. S. gallons)



PERFORMANCE CHART (with 10-foot suction lift)

Discharge Pressure PSI	10	20	30	40	50	60	70	80	90	100
Discharge Hd., Ft. Water	23	46	69	92	115	138	161	184	207	231
U. S. Gal. Per Minute	250	227	197	164	130	101	78	54	38	25

Send for Complete Information Today!

NATIONWIDE SALES AND SERVICE

5-3205

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Los Angeles 45, California
Export Department: 301 Clay Street,
San Francisco 11, California, U.S.A.
Canadian Distributor: 525 First Ave., Quebec, P.Q.
220 W. First Ave., Vancouver, B.C.
861 Lansdowne St., Peterboro, Ontario

McCULLOCH

Save More Lives With E & J RESUSCITATORS

- In asphyxiation cases the victim needs oxygen FAST; *the E & J breathes pure oxygen for the patient automatically, safely and effectively as long as necessary.*
- The victim may be severely injured or hard to reach for manual resuscitation; *the E & J touches only the face and can even resuscitate through a catheter if necessary.*
- The victim's throat may be blocked by unseen obstruction or faulty head position; *the E & J signals instantly if oxygen can't enter the lungs and it provides an aspirator to remove normal obstructions. When a partial obstruction cannot be dislodged, the E & J can be adjusted to usually by-pass it and get oxygen to the lungs at a slow but life-saving rate.*
- The victim's heart action may be weak; *the alternating positive and negative pressures as used by the E & J have been shown to benefit heart action.*

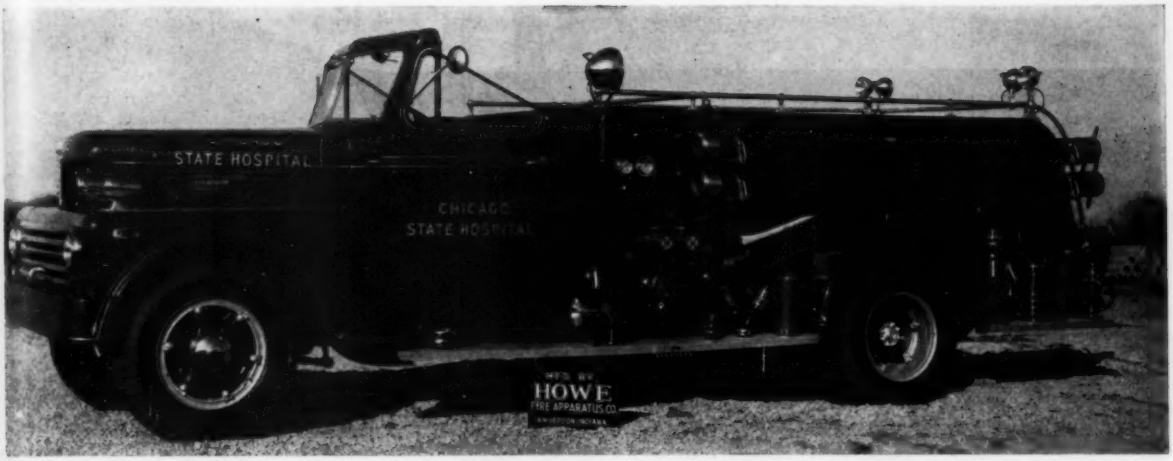
These are just a few of the reasons why Rescue Squads call the E & J their "greatest life-saving tool." Check these and many others at a free, full-scale demonstration right in your own Department. Just write or wire today to:

E & J RESUSCITATOR • INHALATOR • ASPIRATOR

Triple Model Illustrated

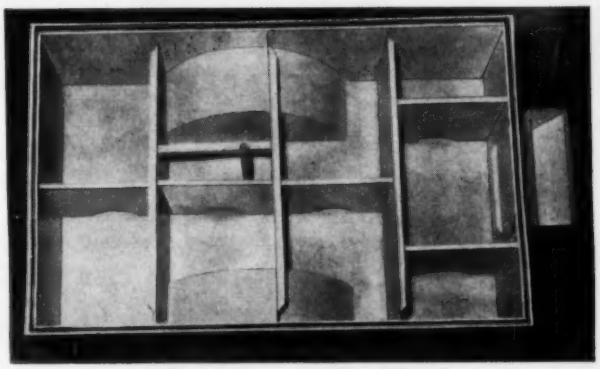
E & J MANUFACTURING COMPANY

Dept. 526-6, Burbank, California



LOOK TO HOWE FOR THE NEWEST IN FIRE APPARATUS

Features essential to efficient fire fighting are built into HOWE Fire Trucks. Here are "firemen's fire trucks," the result of four generations of manufacturing experience. Equipment is Underwriter Approved. Truck shown above is mounted on HOWE DEFENDER custom-built chassis with 750 Gallons Per Minute capacity pump, special semi-cab, and rear-mounted reel . . . Write for free literature. Ask to have a HOWE representative call on you.



INTERIOR OF A HOWE BOOSTER TANK

SOME OUTSTANDING FEATURES YOU GET WITH HOWE!

- **Completely removable top** on Howe Booster Tank gives access for cleaning. Tank is rust-treated with special U. S. Navy developed 3-coat Vinyl-Resin lacquer. Automatic water level gauge.
- **Automatic pump prime indicator** to eliminate danger of premature shifting and loss of prime.
- **Quick opening valve controls,** fingertip, ball type, throughout. Operate under any pressure.
- **All instruments and controls** in pump panel collared with removable stainless steel plate for easy access to pump's working parts.
- **Special construction non-slip** running boards. (Not ordinary tread plate.)

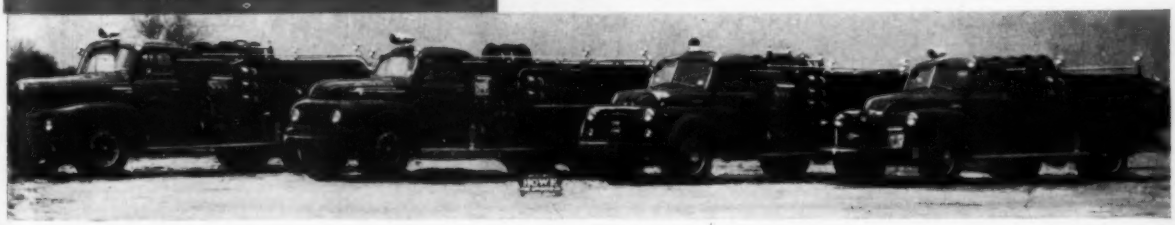
HOWE

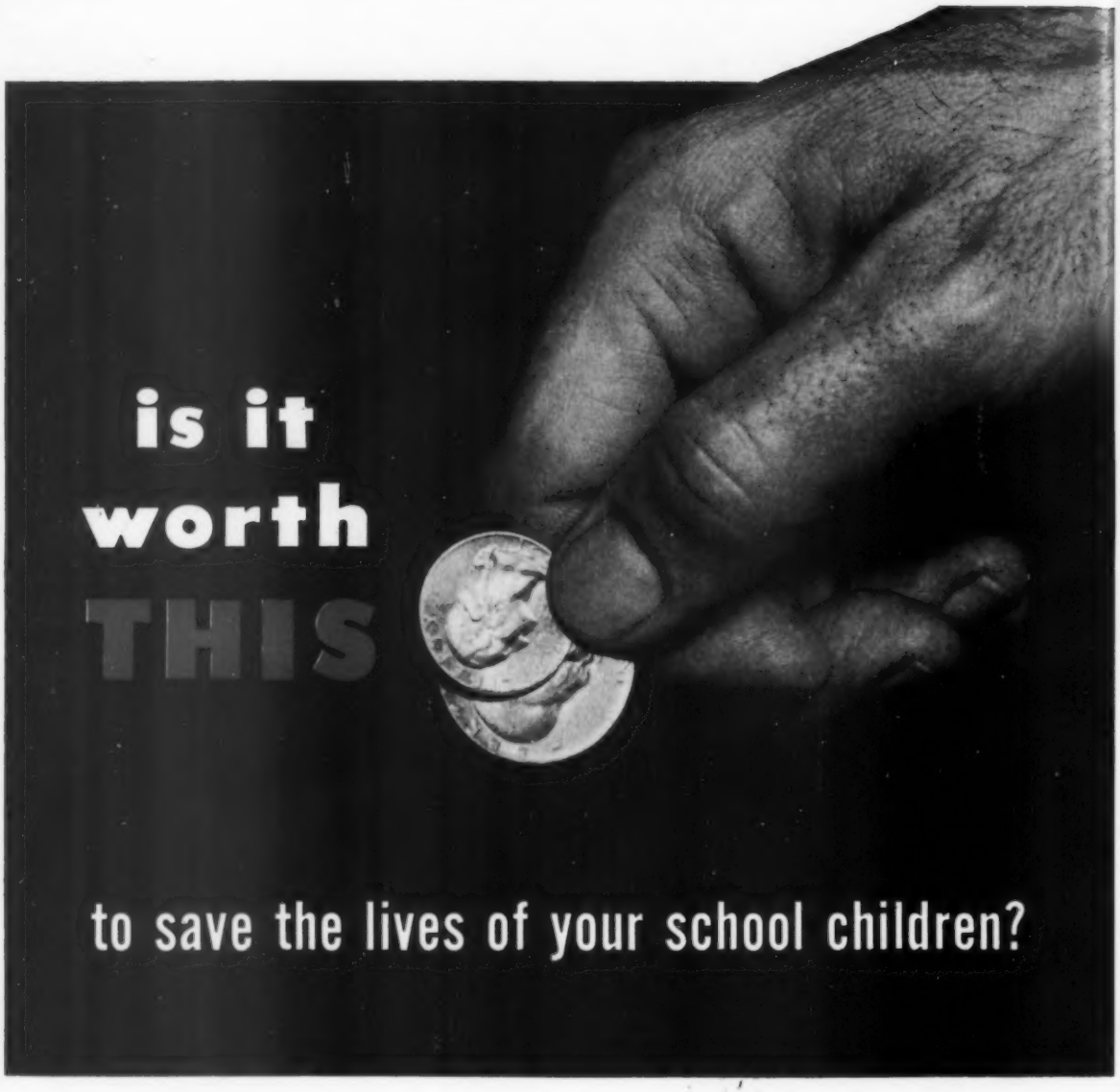
"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Dept. FE3 1405 West 22nd St., Anderson, Indiana

BELOW: One Day's Deliveries for Satisfied Howe Customers All Over United States





Many people don't realize that a community of less than 50,000 people can have safe, sure fire alarm protection for an average annual cost of 75¢ per box per person.

And that cost includes installation of the system, as well as maintenance throughout the years.

Schools — yes, and hospitals, hotels, institutions cannot go unprotected without endangering hundreds of human lives.

For the full story of safe, sure alarms with a Municipal Fire Alarm System, consult us about making a survey.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.
In Canada: Northern Electric Co., Ltd., Belleville, Ont.

There is no substitute for the Municipal Fire Alarm System

FIRE ENGINEERING

NOVEMBER, 1953 VOL 106, NO. 11

With the Editor

Is Ventilation an "Orphan Child"? It will be recalled that in 1948, '49 and '50 we published a series of studies on coordinated fire attack. In these we urged the fire service to concentrate more on fire *attack* and less on fire *defense*.

The author of these studies unearthed a number of interesting facts to support his contention that the reason so many fires get away from the firefighters is because firemen never manage to come to grips with the fire in its early stages.

One of the reasons for this obvious conclusion is that the initial attacking forces are simply stymied in their efforts to locate the heart of fires by their inability to penetrate smoke and gas-charged interiors. Lack of respiratory protective equipment, in the main, has not only been responsible for slowing up fire attack but it has resulted in the incapacitation of too many good firefighters, with resulting increased costs to the property owner and taxpayer, not to speak of the misery suffered by the firemen themselves. Nor has this situation done anything to improve fire department morale and good will.

This failure to *get in*, to *get at* the fire in its early stages has been a prime contributor to much of our mounting fire losses. Even leather-lunged professional firefighters have been exasperated by the delays encountered in their efforts to penetrate smoke and gas-charged atmospheres of buildings, particularly when after ultimately reaching the fire, they found it was only some trifling combustible such as a closet-full of clothing, an old mattress, or a barrel of plastic shavings. By the time firemen reached a fire, perhaps following a wait for a rescue squad to arrive with breathing apparatus, the insignificant blaze which of itself may have caused little actual *fire* damage, resulted in heavy smoke and water losses, depending of course upon the attack and salvage practices of the department in question. Some departments still persist upon pegging away with hose streams through the smoke.

The moral of this message is not alone to emphasize the wisdom of *adequately* equipping the fire force with all the masks and breathing apparatus and other equipment required to meet any and every condition encountered in fire attack, but to review the problem of ventilation in the light of the attack-power such innovation gives the fire forces. For if such equipment is of any value to a fire department, it is in shortening the period between the time of the first crews' arrival at the fire scene, and when they are able to "make the floors" and begin search and rescue and essential ventilation.

All of which provokes the question, are we re-evaluating and readjusting our ventilating strategy to (1) meet the new and peculiar smoke and chemical problems being introduced by this chemical age in which we exist, and (2) where we *have* added such improvements to our department as masks, water fog, fog-foam, wet water, pre-connected lines and portable power for lighting and forcible entry—to name a few, are we failing to employ *all of these assets* to improve attack by eliminating the annoying obstacle to effective attack: smoke and gas-charged atmospheres!

Recently we commissioned one of our editors to dig into this question. He did. And he came up with some interesting conclusions, one of which is that in too many departments the entire subject of ventilation is either not included in the training curriculum at all, or else, if so, it is treated as a sort of "orphan."

Our findings have led us to begin a new study of this controversial subject, with emphasis on its relation to fire *attack*. We will, of course, not omit the chemistry of modern fire ventilation but we particularly desire to explore some of the more recent developments which have not been adopted as standard ventilating practice by the fire service. We refer to the removal and ejection of smoke and gas-charged atmospheres by power-operated air-movers, and the potentialities of venting by means of water-fog.

The first part of this study begins in this issue. We hope it will inspire readers to devote more thought and time to that orphan of the fire service, good ventilation.

Fred Shepard

Fire Service Ventilation in Principle and Practice

Part 1. Fundamentals of Modern Ventilation; Its Purpose and Requirements, and Limitations

By ROI B. WOOLLEY
Assistant Editor

Editor's Note: Ventilation in fire suppression has come to assume greater importance with the years. Yet strangely enough, it would appear that the subject has nowhere near the serious consideration by the fire service it deserves as gauged by ventilation's importance in relation to other fire control factors, and by the advances made in fire attack and defense strategy. In reviewing the curriculums of state and other fire schools it is surprising how little time is found devoted to this topic.

The subject of ventilation in its full context, includes much more than the mere ridding of a building or area of contaminated air. To properly appreciate its importance, the progressive fire fighter should study it as it relates to such factors as the chemistry of fire; the behavior of gases and vapors; the design and construction of buildings; the effect of weather on fire control. Oddly enough, thus far no single authority has attempted to comprehensively cover in a single study the subject in this broad perspective. Nor has anyone endeavored to define the impact of good and poor ventilation on fire department operations, and fire losses.

That there is need for a reappraisal of the entire subject of ventilation with particular reference to its evaluation from the standpoint of modern fire attack and control is generally agreed by those who have studied the subject. Thus far no student has attempted to weigh ventilation in the light of the new hazards—chemical and otherwise—which are complicating the fireman's work today, or of the newest tools of fire suppression which the fire service is using or contemplating using as its solution to the problems that face it. We refer to modern respiratory protective equipment, power forcible entry tools, use of water fog, fog foam and wet water; air moving, smoke ejecting equipment, etc., to improve ventilation techniques and operations.

Finally, it would appear that no student has attempted to study ventilation as a definite element of modern fire attack, and rescue. From this consideration alone the editors have been encouraged to inaugurate such a study, the first part of which follows. The author is Chief Roi Woolley, assistant editor of FIRE ENGINEERING, whose several studies on coordinated fire attack appeared in this journal.

This part of the study makes no attempt toreview the chemistry of ventilation, including such details as the burning and toxic characteristics of solids and liquids; the elements of combustion, and its by-products, etc. The first chapter deals with the advantages and "reasons why" of good ventilation and other basic fundamentals, and discusses some of the elements which enter into scientific ventilation. Other elements will be discussed later.

It is hoped that this study will suffice to direct the thinking of fire protection engineers to the wider ramifications of ventilation, and encourage them to devote more time and effort to reshaping and revitalizing their own ventilation techniques to better meet today's and tomorrow's fire suppression problems.

The list of authorities which have been consulted by the author is too long for publication here. It is hoped later to include them in a bibliography on the subject.

AN editorial in FIRE ENGINEERING of April, 1949, said: "At present rates of destruction, fire will cost this nation over eight billions of dollars in property losses, and will take the lives of over 100,000 persons, while bringing injuries to many times that number, in the next decade.

"Hundreds of fire fighters alive and well today will be listed among the casualties of the next ten years' battle with consuming fires.

"Those who like to juggle statistics can have a Roman Holiday, figuring what losses are going to mean to the nation's post-war economic and social existence. The fire service, however, is too busy right now figuring out how to control, extinguish and prevent fires to join in any statistical orgy. To the fire service, these losses will be interpreted and recorded in hours of grueling struggle against a foe that knows no quarter and gives none. They will be gauged by critical action, during which time an error in strategy, a mistake in judgment, a failure of a plan of movement, or of a pumper or any other weapon of the fire fighters engaged in the operation, can have costly and perhaps tragic repercussions.

"If these losses of billions of dollars worth of property and thousands of lives are to be curbed and curtailed in the years ahead, it will be largely because the fire service has been equipped and trained to the requisite degree of perfection to accomplish it. . . .

"Let us emphasize that 'equipped and trained' for, unless the fire service is given the necessary fire control facilities, and knows how to use them, there can be no downward trend in the fire loss figures; rather the opposite is possible.

"We stress this point for several reasons. The first, and most important, is that the tempo of fire is continually accelerating. This tempo has kept pace with, and is in a measure, the handmaiden of our nation's fast-paced industrial tempo. The fire service had to revise its thinking, its fire control strategy and mechanical fire extinguishing facilities when gasoline and other vola-

Whether in a chemical plant, or fire involving chemicals in an industrial plant, fire suppression is a hazardous undertaking. In this Chicago chemical plant, clouds of smoke-like ammonia vapor formed when intense heat melted the storage containers. Cans of exploding lacquer added to the problem of opening up the charged, sizzling structure. Occasionally there may be fires that just have to ventilate themselves.

tiles entered the fire picture years ago. It has had to further revise its tactics and armament as new and deadly hazzards were developed and marketed. Nor has it reached the end of its metamorphosis. . . .

"The fire service may be the nation's first line of defense against fire, but it can never win the battle against fire solely by defensive action. It has got to carry the fight to the fire, to prevent it by any and all means possible; but when fire occurs, to attack with utmost dispatch and with all the necessary facilities to annihilate it in the shortest possible time.

"In order to do this, the fire service must first of all revise its thinking, its viewpoints of the entire cycle of fire propagation and control. In a day when known, definite improvements in extinguishing agents and equipment have been tested, approved and adopted by many progressive fire departments and are available to all, it is inviting catastrophe to stick to outworn, outmoded methods and factilities.

"The science of fire protection has brought to the fire service, besides fast, accurate communications, such improvements as: water fog and fog nozzles; foam and fog foam and foam appliances; wet water and proportioners for using it effectively. It has brought improved extinguishing agents. It has armed the services with respiratory protective equipment; it has provided water carriers and pumping units; portable power and lighting plants; metal ladders and other specialized apparatus and equipment to lead the attack on fire.

"These modern age improvements are here. They have been tried and their worth demonstrated. They offer the fire service the best answer to the problem of how to keep pace with the speeding tempo of fire today."

The editorial then referred to the series of articles on fire attack, which had appeared in this journal. The theme of this entire series of studies was locating the fire, getting on top of it before it had opportunity to extend itself, and extinguishing it with the least loss of time and damage to the property involved. Only by so doing can effective rescues be made and both life and fire losses be reduced to the minimum.

This brings us to the subject of this particular study—"ventilation."

Every experienced fireman will agree that the most serious obstacle to the rapid and successful attack upon fire has been the presence of impenetrable—or apparently impenetrable—smoke and/or gases. This is particulary true of night fires and of fires occurring in rainy or highly humid weather.

Every fireman knows, too, that the volume of smoke that keeps him from rapid attack on the fire, or from effective rescue of trapped victims, is no true indication of the extent and severity of the fire. Most firefighters have had the unpleasant experience of being unable to "make the floor" of an involved building because of smoke that emanated from what later proved to be trifling combustible material such as a mattress, or overstuffed furniture.

If we are to adhere to the lexicon of the fire service: first locate the fire; control it; extinguish it (with least property damage) and prevent its rekindle, the paramount problem then is to get into the structure. This is the strongest possible argument why all fire departments should have ample respiratory protective equipment.

But getting in isn't the only factor: it is necessary to rid the structure of its accumulated smoke, heat and gases to facilitate search, rescue, and to reach and extinguish the fire. This operation is termed "ventilation" or "venting" a building.

Any study of the theory and practice of fire department ventilation may well start with these salient facts:

1. Just as every fire is different, so do the problems involved in ventilation vary at every fire.

2. That although ventilation is a vital essential in fire control, extinguishment and rescue, it presents hazards. Even carefully planned ventilation can be a dangerous procedure.

3. There are many factors and conditions bearing upon the success or failure of this operation. Failure to provide for or appreciate one or a number of them may jeopardize the entire operation.

4. Ventilation practices are more or less technical practices. To best perform them the fire officer should have a good understanding of what has happened in a building that has filled with smoke from a smoldering fire and what is liable to happen if ventilation is handled improperly. The more technical, scientific knowledge the fire officer has at his command in situations presenting smoke and gas hazards, the better job of ventilating he will do. In short, "rule o' thumb" has little place in modern, scientific ventilation practices.

5. Teamwork and cooperation are the cardinal rule in modern ventilating.

6. Time is of the essence.

There are many other factors which bear upon scientific ventilation and which will be developed in this thesis, but these are the major ones to remember.

Purposes of Ventilation

The dictionaries give different terms for ventilation, but all of them generally agree that it means to "admit fresh air into." This definition might have been satisfactory to yesterday's ventilating practices, but there is much more to that today. Today's definition may better read like this: "The removal of dangerous and destructive, disagreeable smoke and/or gases and their replacement by fresh air." The practice of performing ventilation includes those operations which are required to displace a contaminated and heated atmosphere within an involved building or area with uncontaminated, cool air from the outside atmosphere.

The problem of ventilation is not alone ridding burning buildings of heat, smoke and gases, but may have to be met by firemen in other emergencies like this one, when tear gas, used in a trust company's burglar alarm system, was accidentally released and forced through the building by its air conditioning system. Wilmington, Del., firemen helped remove everyone from the structure, more than forty of whom were hospitalized.

Churches present their own special problems in ventilation. Firemen of Woburn, Mass., use aerial ladder to assist in opening in slate roof of 100-year-old church, relieving interior of smoke.

First let us briefly review the advantages of scientific fire department ventilation:

1. Saving of life: It hastens and simplifies the rescue of persons trapped in the building or area. It further safeguards the fireman's own tasks in rescue and fire attack. It facilitates search for and removal of those who might be in danger.

2. It Speeds Attack: By removing smoke, gases and/or heat it permits you to locate the seat of the fire and get promptly to work on its extinguishment. This is virtually impossible in a smoke-charged building. Also it enables you to more quickly determine the path or travel of the fire and to take measures to control it.

3. It Reduces Danger of Backdraft or Smoke Explosion. A phenomenon feared by firemen is the unexpected and often unexplained explosion of pent-up, combustible gases. Such explosion is caused by the admission of fresh air to a building containing fire that has been smoldering. The air admitted provides oxygen for the rapid combustion of flammable gases distilled from contents of building but not consumed due to insufficient air until structure is opened up.

Frequently one explosion may touch off a whole chain of explosions, involving accumulations of explosive gases in pockets or closed areas of the building.

Usually the explosion of heated gases follows the opening of a window, door, sidewalk grating, ventilator, or roof in the smoke and/or gas filled building, or section of the building, such as basement. The degree and intensity of the explosion, or backdraft, depends usually upon the area filled with the explosive mixture of gases and the volume of fresh air coming in contact with it. If the air admitted fills quite some space with the mixture before being ignited, an explosion may occur that will wreck the entire building.

4. It Lessens the Chance of mushrooming: Prompt, efficient ventilation reduces the possibility of the spread of fire at the top of the structure, such as occurs when heat and gases rising under pressure reach an obstacle and spread laterally. In a word, it helps to prevent the spread of fire.

5. It Lessens Danger to Exposures: Good ventilation helps to minimize the exposure to floors above the fire, and to adjacent buildings. By clearing the path for firefighters it permits them to cut off, or flank, fire that may threaten other property, and possibly lives.

6. It Eases and Simplifies the Fireman's Job: It not only affords safeguards for the firefighter, but it lessens the punishment he must take in carrying out the tasks assigned to him. Therefore it reduces fear and improves morale. Fire crews today are generally smaller than in days gone by. Even with smaller hose, the exertion of advancing hose lines in the effort to reach a smoky fire makes the firefighter more susceptible to the toxic effects of the gases of combustion. Where the department is short-handed and where modern respiratory protective equipment is not provided the attacking crews, there is less chance for firemen to be "spelled off" and gain a respite from inhaling smoke and gases.

Viewed more practically, good ventilation saves a fire department hard, cold cash by reducing the sick-time of its members. This is a factor many municipal administrations overlook in their refusal to provide the best of safeguards and fire fighting and ventilating equipment for their firemen.

7. Ventilation Reduces Extent of Water Damage: Every experienced fire officer knows that by being able to quickly get to the seat of the fire and extinguish it, he reduces not only the actual fire damage but costly attendant water and overhaul damage.

The old saying that where there is smoke there is fire may be true, but smoke is no indication either of the extent and degree of the fire, or of its true location in a building. Hence the senselessness of throwing water into the smoke-filled areas where there is no assurance that the stream will hit the fire.

Efficient attack, which is in large measure made possible by efficient ventilation, lessens the necessity of wasting water or extinguishing agents, with consequent reduction in the annual fire losses.

8. It Reduces Smoke Damage: What we have said about water damage applies equally to reduction of smoke damage by adequate ventilating.

The modern concept of scientific ventilating embraces smoke and odor removal following a fire, as well as smoke removal in attacking it. Newspaper accounts such as "Smoke Damage Heavy to Adjoining Buildings" will find less and less prominence as scientific ventilation is practiced by fire departments and salvage squads.

True, in the first stages of getting at a smoky fire (what with present-day reduced crews) the question of protecting adjoining properties from damaging smoke may have to take second place. But even one man who can be spared if detailed to check exposures and take the steps necessary to prevent invasion of smoke and fumes, can earn his salt.

The author would be remiss at this stage if he did not draw attention to the fact that few fire departments are availing themselves of smoke removal equipment and air moving devices presently available to them. Although their value has been attested time and again, not many departments carry any equipment such as smoke ejectors or movers.

The subject of chemistry is heavily involved in the science of fire attack and extinguishment. This is a chemical era. One has only to look at the variety of chemical extinguishing agents now used by the fire service to realize this. However, although chemistry is giving the firefighter still further products and methods to help prevent and suppress fires, not many fire departments are awake to the possibilities. There are chemicals which can be thrown on a fire which will change its whole complexion. It is not inconceivable that before long there will be chemicals which will take most of the toxic and explosive hazards out of smoke. Meantime, however, there are many power-driven devices for ridding areas of smoke and gases, which will materially facilitate ventilation.

9. It Permits of Prompt and Effective Salvage Operations: Logically, the faster the attack upon the fire and its extinguishment, the less need there will be for overhaul, and the greater the opportunity for effective salvage. There have been fires in multi-story buildings where, although the basement or one floor or more were completely burned out, intelligent ventilation held smoke and water losses throughout the balance of the structure to the minimum.

Many a salvage officer has bemoaned the fact that he and his men were unable to institute effective salvage operations because of failure to properly ventilate the structure in the early stages of the fire. There is little saving effected in putting covers over water soaked, smoke-filled goods. Salvage, like ventilation, will ultimately receive the consideration it deserves; at present it is a sort of step-child, one of the reasons

being the failure of fire attack and salvage crews to coordinate their efforts.

10. Good Ventilation Builds Public Good Will. By accomplishing all of the foregoing, good ventilation increases public confidence in the fire service, not to speak of enhancing the pride members of the fire force have in their organization.

Is there any fire chief who doesn't cherish the letters of appreciation sent his department by grateful property owners after a fire in which the firefighters did a "professional" job? Good ventilation, perhaps more than any other fire fighting operation, pays dividends in good will.

It is safe to say a majority of the fires encountered by firemen are of minor nature and create more smoke than fire. Ventilating is largely a matter of opening windows or doors and, if they are available, using power devices to move out the smoke and odors. The practice of unnecessarily knocking out windows, of yanking down curtains and shades to air out the premises in minor fires still persists here and there, but in the main, it is gratifying that the fire service has come to appreciate the value of good firemanship as a builder of good fire department public relations.

How the Public Views Ventilation

The practice of fire department ventilation, even when performed efficiently from the standpoint of the fire protection engineer, may be misunderstood, and may bring criticism from the public, particularly the uninformed who can see no sense and no relation between a fire in a basement and a hole in the roof several stories above.

The entire problem of opening up a building to get at and subdue a smoky fire, of necessity may involve some destruction of property and this may be viewed unfavorably by the householder and the "sidewalk chief." The act of knocking in a fanlight or transom over a store door, or the door itself, when no fire and perhaps little smoke shows, may bring criticism of the man in the street and unfortunately, there appears little that can be done about it, except, perhaps to educate the public.

There is no excuse, however, for the criticism that improper ventilation encourages. The only remedy for this is better knowledge of the objectives and limitations of ventilation, and better training for it.

At least one metropolitan fire department, Los Angeles, has recognized the wisdom of taking the public into its confidence in this respect. The Los Angeles Fire Department has prepared and shown widely a motion picture film which graphically explains the problems of ventilation and salvage. In addition, the department has resorted to press and radio and other measures to acquaint and sell the public on good firemanship.

Requirements for Good Ventilation

We have outlined the objectives of good ventilation and its effect on the fire department and public; now let us consider the factors having a positive bearing upon the success or failure of the ventilation—the requirements for enabling a fire department to do an efficient, safe job of it.

1. **The building and Contents involved:** The fire department should have thorough knowledge of the building and its occupancy. This is manifestly impossible in the field of residential dwellings, but it is feasible in all other types of occupancies. Company and departmental inspections should acquaint at least first-due companies with the details of location of the building; construction (wall, floors, roof, skylights, ventilators, shafts, penthouses, blind attics, sub-basements and concealed areas; the type, location and protection of vertical openings; the location and type of partitions and firestops that would have a bearing on the spread of fire; air conditioning and ventilating and heating systems in the premises.

Of equal importance is a knowledge of the occupancy. What are the contents; are they fast-burning or of a smoldering nature? Are there stores of explosives, or materials that would explode under certain conditions? How and where stored, from the viewpoint of venting the structure? Also, would the storages in themselves or a mixture of them, create serious toxic conditions at time of fire?

2. **Location and Nature of the Fire:** Where is the fire, with relation to the building itself, and contents? What is its extent and severity? Can it be held and localized by the fire force at hand? What are the smoke conditions? Are there indications of built-up pressures, of toxic contents, or oxygen deficiency?

Can any information be had from tenants who may be present, that will influence opening up for ventilation?

3. **Atmospheric and Weather Conditions.** Weather plays an important part in ventilation, and in the punishment firefighters must take in attacking a fire in a smoke-charged structure.

The atmospheric factors that should be considered are (a) wind—direction and velocity; (b) temperature—heat or cold; (c) humidity—damp or dry.

The direction of the wind and its severity, will have much to do with smoke and gas travel and with the points at which ventilation should be started, and with the rapidity with which the premises can be freed of smoke and gases. These factors also should be considered with relation to exposures. Every ventilation operation should be predicated upon a knowledge of which is the windward, and which is the leeward side of the building involved.

The temperature at the time of the fire has a bearing upon the speed with which ventilation can be accomplished. Outside ventiltation becomes more hazardous in snowy, icy weather; on the other hand, men can suffer from the high temperatures in performing cutting and other ventilation operations. In hot weather, structures may have more openings for fire to vent itself and through which oxygen can feed the fire than in very cold weather when buildings are normally closed tight.

High humidity will tend to hold down smoke and gases to lower levels and the degree of air saturation will bear upon the smoke concentration outside the involved structure. A basement or first floor fire on a rainy, humid day can give firefighters outside the structure almost as much punishment as those who are trying to operate inside. Under these conditions, visibility is reduced and the risk to firemen of tripping over hose, or falling down hatchways is increased.

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Modern false fronts complicate ventilation. In this Camden, N. J., Food Center fire, heat and gases built up behind blocked off openings in the building and were ignited, resulting in an explosion that blew out window displays, etc. Fortunately, firefighters were not in the line of blast. Here they have driven back the flames which followed the explosion of gases, and, while they have cooled down the main floor, they are experiencing difficulty getting at the fire above.

Canadian Underwriters to Test and Label Fire Apparatus

By D. M. BAIRD*

AN ambitious forward step in the maintenance of fire apparatus standards was made in July by the Dominion Board of Insurance Underwriters of Montreal, Canada, when that organization published its first release of fire department pumpers to qualify under the Dominion Board Listing Service.

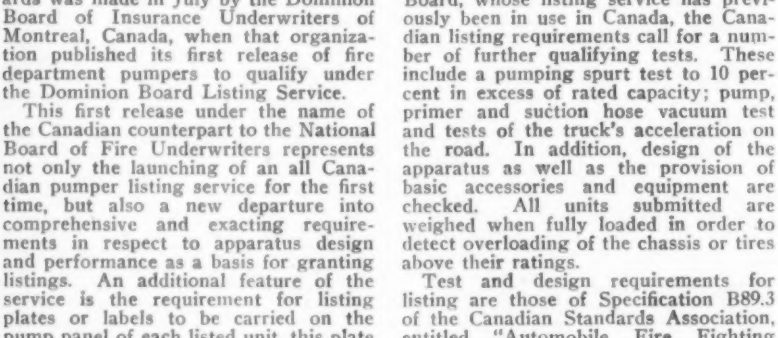
This first release under the name of the Canadian counterpart to the National Board of Fire Underwriters represents not only the launching of an all Canadian pumper listing service for the first time, but also a new departure into comprehensive and exacting requirements in respect to apparatus design and performance as a basis for granting listings. An additional feature of the service is the requirement for listing plates or labels to be carried on the pump panel of each listed unit, this plate bearing the listing number assigned to the model by the Dominion Board.

While centered around the passing of a twelve hour endurance pumping test procedure similar to that of the National Board, whose listing service has previously been in use in Canada, the Canadian listing requirements call for a number of further qualifying tests. These include a pumping spurt test to 10 percent in excess of rated capacity; pump, primer and suction hose vacuum test and tests of the truck's acceleration on the road. In addition, design of the apparatus as well as the provision of basic accessories and equipment are checked. All units submitted are weighed when fully loaded in order to detect overloading of the chassis or tires above their ratings.

Test and design requirements for listing are those of Specification B89.3 of the Canadian Standards Association, entitled "Automobile Fire Fighting Apparatus," which means the Dominion Board as the testing organization for pumpers. The specification was developed over a period of two years by a committee of representatives from various interested branches of the fire protection field. They included fire chiefs, fire marshals, fire insurance underwriters' engineers, apparatus manufacturers and others. The Canadian standard is comparable in most respects to the joint specification of the National Fire Protection Association, International Association of Fire Chiefs and the National Board of Fire Underwriters, two members of the Canadian committee also serving on the committee responsible for the American specification. One of these is J. N. Pryce, Director of the Fire Protection Engineering Department of the Dominion Board, under whose supervision the listing service is being conducted. Specification B89.3 is designed as an aid to municipalities purchasing apparatus and is available from the Canadian Standards Association, Ottawa.

The major manufacturers of fire apparatus in Canada and municipal fire protection inspection engineers of the eight regional fire underwriters' associations across the country are cooperating to make a success of the new venture, which promises to fill a long felt need for protection of purchasing fire departments, reliable manufacturers and fire protection generally. One manufacturer, though noting a necessitated increase in production costs for a standard model of several hundred dollars, is enthusiastically backing the project as a selling point for his firm.

The underwriters' associations are planning on specifying Dominion Board



Use of a closely calibrated vacuum gauge at the end of 20 feet of suction hose to test the primer and check the pump and suction hose for tightness in accordance with the specification.

A close-up of the rubber-backed aluminum disc and vacuum gauge used by the Dominion Board for accurate vacuum measurements. This is invaluable for diagnosing priming troubles and the condition of a pump without resorting to drafting.

*Fire Protection Engineering Department, Dominion Board of Insurance Underwriters, Montreal, Que., Can.

Measurement of angle of departure or rear-end clearance in connection with design requirements.

listed pumpers in their respective jurisdictions after January 1, 1954; during the interim manufacturers are working on design modifications to meet the provisions of the specification, and approval of Canadian pumpers will continue to be based upon listing of the N.B.F.U., many Canadian pumpers having been listed by that organization.

The listing service constitutes a free service to fire departments and municipal officials on the part of the Dominion Board of Insurance Underwriters and the affiliated regional associations having local jurisdictions. These associations, just as the fire departments, are intensely interested in adequate and efficient fire protection with its consequent reduction in fire losses. Efforts to secure a high standard in design and performance of municipal fire apparatus through the listing service are one more step toward that end. Dominion Board officials are confident municipal officials will be quick to seize upon the advantages to be gained by purchasing apparatus under the new Canadian specification and test procedure as required for attainment of listing by the Dominion Board.

Operation of the listing procedure involves application by the manufacturer of fire apparatus to the Dominion Board for a listing on any new model or design of pumper. After considering the specifications and data submitted, the Dominion Board's Fire Protection Engineering Department arranges for the necessary tests to be witnessed by the nearest regional engineer. Upon passing of the tests and complying with design and equipment requirements, the model is assigned a listing number and the manufacturer told he may attach the prescribed plate bearing this number to all subsequent pumpers built to this same design.

While, to retain his listing, the manufacturer must continue to build all successive pumpers identical to the original as far as the engine, transmission, pump and chassis are concerned, he may vary the body design at will in order to meet the individual requirements of different fire departments. He must, however, make certain that these body changes do not violate the specification in any way. This concept of a listed model is necessitated by the fact that the Canadian listing is based to a considerable degree upon features of design. Thus, because the chassis is important, a triple combination pumper and a quad which are otherwise identical must be listed separately.

Subsequent units of a listed model each are required to undergo the customary three hour acceptance pumping test and certain of the new tests which may be considered necessary prior to or upon delivery to the purchasing municipality. These tests are witnessed by the engineer of the regional underwriters' association having jurisdiction where the municipality is located. Witnessing of these acceptance tests on behalf of municipalities purchasing new apparatus has long been a service of the underwriters' associations, but will now become a part of the listing procedure in order to provide a field check on all units bearing the listing plate.

The principle of performance rating, or granting listing without a twelve hour test, as practised by the N.B.F.U. is followed in cases of slight change between models except that in many instances a four hour test is called for and, in any event the other tests are called for. A feature of listings being granted at the present time is the allowance of credit for the twelve hour pumping test in cases where the model has been previously listed by the N.B.F.U. In such cases, only the balance of the tests are required to be made.

The listing plate, affixed to the operator's pump control panel of every listed unit, has stamped on it the listing number assigned to that model and the tested pump performance rating figures including volume, pressures and engine speeds. Knowing the listing number of a unit, the test engineer of any underwriters' association can quickly draw complete data on the model from his files of listed apparatus, these having been supplied him by the Dominion Board. Much of this information is readily available to fire chiefs and other municipal officials through their association engineer. The performance ratings on the plate are, of course, a quick reference for the pump operator and assist him in the efficient operation of his machine. Provision is made for the removal of listing plates from units found not to comply with listing requirements upon delivery.

Already, the application of the tests and design requirements to fire apparatus being produced in Canada is confirming suspected weaknesses in design. Overloading of the truck chassis and tires upon which the pumper is built is very common, for example, due usually to the demand in recent years for large booster water tanks. Frequently municipalities specify or themselves supply a

(*Continued on page* 1056)

A pumper undergoes the 12-hour pumping test while a Dominion Board test representative checks its performance.

The first pumper of Bickle-Seagrave, Ltd., to have the Dominion Board listing plate attached. The plate may be seen above the pump control panel. Shown in the picture are J. N. Pryce, Director of the Fire Protection Engineering Department of the Dominion Board and A. Brossard, General Manager of Bickle-Seagrave (Quebec), Ltd. Unit is for city of St. Jerome, Quebec.

Controlling Hazards of Materials in Transport

A Symposium

THIS is the final installment of the symposium conducted by FIRE ENGINEERING on the subject of controlling the hazards incidental to the transportation of flammable liquids and explosives.

The symposium was initiated in the September issue and was continued last month. The following observations will be found fully as interesting and enlightening as those which have preceded them. Again, we welcome comments from any of our readers on this most timely subject.

Lloyd B. Dickson
Chief, Fire Department
Provo, Utah

Our Fire Code empowers the Fire Chief to prescribe safety rules, designate routes, inspect vehicles carrying flammables and prohibit unsafe vehicles from using city streets.

We designate certain streets for the through transportation of flammables. Streets are also designated for local delivery in amounts over fifteen hundred gallons. We limit transportation of gasoline, or other Class One liquids, to fifteen hundred gallon capacity tank trucks in our main mercantile area.

We have not had a catastophe, but have had two accidents that were hair raisers—in the first a truck-trailer with seven thousand gallons of gasoline collided with a two car electric train jammed with college students. The engine was torn out of the big diesel truck and about two hundred gallons of gasoline spilled under the truck and the train, which was derailed. It did not ignite. The second accident involved a thirty-five hundred gallon semi-trailer which overturned on a city street and spilled twenty-five hundred gallons of gasoline in the gutter and down the street. It did not ignite. Needless to say, in both cases we were pretty apprehensive until we could get our flushing lines in operation and our other gear set up.

Although we have had some controversy over our 1500 gallon limit in our mercantile district, we still favor the opinion that it is unwise to permit large transports to travel our streets unrestricted, especially in our mercantile area. This point of view is not shared by either NFPA or NBFU, however. Both contend that one large quantity delivery is, from an accident standpoint safer than several smaller deliveries, a perfectly logical and reasonable conclusion.

J. C. Sievert
Chief, Fire Department
Tucson, Ariz.

Anyone wishing to transport explosives in or through the city is required to obtain permits from both the Police and Fire Departments. The authority for requiring permits from the Police Department is contained in the Arizona State Traffic Code, and from the Fire Department is contained in our Fire Prevention Code.

At the time the permit is issued, a route is planned which will use the least congested streets and bypasses high value areas and heavily built up areas.

We have had no fires involving the transportation of high explosives in recent years.

Although explosives are brought into the city and through the city, it as yet has presented no particular problems to us.

George W. Scarlett
Chief, Fire Department
New Britain, Conn.

We do not have any control over the actual movement of trucks transporting flammable liquids, but the trucks must be regularly inspected and approved as to construction, mechanical condition and fire extinguishing equipment. State regulations in this respect are ample and fully enforced.

Transportation of explosives is prohibited between sunset and sunrise, except by special permission of Fire Marshal, and trucks engaged in such transportation shall not park in any public street or highway or near any place of public assembly; otherwise, no control over movement.

We have had no fires or accidents involving such trucks.

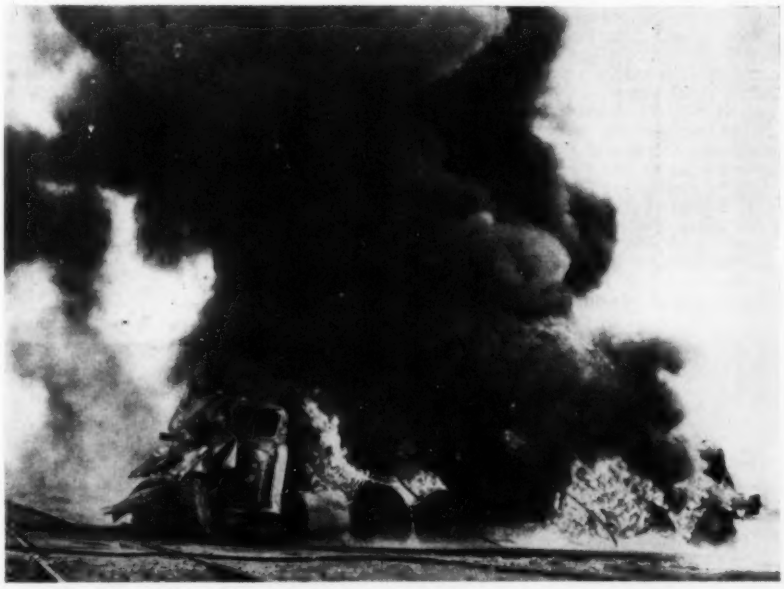
Regulations in this state are comprehensive and in this city strictly en-

The smouldering ruins of the center of Miamitown, Ohio, are shown after a tank truck, fully loaded, roared out of control, crashed into a house and exploded on October 13, 1953. Several other dwellings, including the town post office, also were destroyed by fire. Driver of the truck was killed.

Passersby view a crater fifteen feet deep blasted out when an ammunition truck exploded on U.S. Highway 6 about four miles east of Axtell, Neb., on October 23. The vehicle was blown to bits and buildings were rocked 20 miles away. The driver was able to unhitch the cab of the truck and drive to safety after a fire caught fire. It was the fourth such blowup in six weeks.

Fire fighters crouch behind one of their trucks to avoid being hit by exploding shells, after an ammunition truck loaded with 105 mm. shells collided with a passenger car bearing four women near Omaha, Neb., on October 13, 1953. Three of the women were killed in the accident.

Ten were killed in this wreck near Baker, Cal., on September 23, 1953. Onlookers stand helplessly at the debris of a flaming crash involving two trucks and an automobile. Among those who lost their lives were members of a wedding party, including the bride and groom.



Burning asphalt truck sends a dark column of smoke skyward and spreads the melting paving material over highway after it was set afire in a collision with a gasoline truck on U.S. Highway 20, near Michigan City, Ind., on May 27, 1953.

forced. We believe a rigid uniform code, complete in scope and strictly enforced would be of benefit to those municipalities who have such a problem.

C. N. Penn
Chief, Fire Department
Dallas, Tex.

In the city of Dallas, all explosives carriers are provided with an annual permit from the Fire Marshal's office which includes a map of the city limits with certain prescribed routes which must be followed in transporting explosives. Naturally these routes avoid congested areas and high value districts. Special permits are issued to carriers to transport explosives to particular jobs within the city, but in the downtown high value districts the amount of explosives is limited to that required for one day's use. All persons using explosives are required to secure blasting permits and must be thoroughly familiar with all regulations governing transport and use of explosives.

Flammable liquids transport vehicles must conform to ICC requirements and are prohibited in Fire Zone I, except to make deliveries. Annual inspection is made of all transports carrying liquefied petroleum gases before permits are issued. Frequent inspection of gasoline transports are made to see that all safety requirements are met.

In recent years two near tragedies occurred with explosives—one while in transport and the other after having reached its destination. A pick-up truck, carrying several cases of dynamite, exploded while following a prescribed route on the city's fringes. The tarpaulin covering the truck ignited, probably from a cigarette thrown from a passing car. The truck driver was advised of the fire by a passing motorist and stopped his truck on the highway shoulder, got out and stopped traffic both ways and notified the fire department. His prompt action resulted in no lives being lost and property loss was held to a minimum. In the other instance, several cases of dynamite were brought into a warehouse and stored on the truck over a weekend—an illegal procedure since no permit had been issued and the explosive was not in an approved magazine. On Monday, a fire was accidently started by workmen while trying to light a welding torch. The fire got out of control and before firemen were able to control it, the dynamite exploded, causing extensive property damage in the vicinity. No serious fires or explosions have resulted from transport of flammable liquids as drivers of these transports are thoroughly trained in proper methods of delivery and how to take care of minor emergencies involving delivery.

It is our opinion that the problem of explosives and flammable liquids transport can be solved only through strict regulation of routes around the city and by enforcement of regulations requiring permits for transportation, storage and use of explosives.

G. R. McAlpine
Chief, Fire Department
Oklahoma City, Okla.

The transportation of flammables such as gasoline and liquefied petroleum gas, is rapidly becoming a problem to fire chiefs due to the increased use of the products:

Butane and propane are common and can become involved in an accident when dumped on our streets, as has happened in our City.

As long as the human element enters into the handling of these products, there will be mistakes, and we may never know who the individual is that is reckless in handling gasoline, butane and propane until the accident occurs, and you have a major fire in your City.

There are certain regulations that if

(*Continued on page* 1056)

Television Gives Boost To Fire Prevention Programs

Widely and Effectively Used in Connection With Fire Prevention Week Activities

THIS year's Fire Prevention Week was apparently on a par with that of 1952, measured by the amount and quality of material reaching *Fire Engineering*. This year the press and radio devoted considerable time and space to getting over the fire prevention message to the public, and cooperating with the fire departments.

Several of the larger cities this year put forth special efforts to hang up Fire Prevention Week records. Notable among them were New York and Philadelphia. Both used the newspapers, including daily, weekly and foreign language press. Both used radio and television time, generously furnished the fire departments. "Interview" programs on TV were particularly successful in Philadelphia, it is said. In the latter city, the house publications of over 100 firms contained Fire Prevention Week messages. In addition, there were the customary displays of posters, the essay contests, open house at fire stations, promotional activity among school children, Boy and Girl Scouts, Service clubs and the like.

In New York City what the N. Y. *Times* said editorially was "something definitely new" was added to the observance of Fire Prevention Week with the organization under the chairmanship of Fire Commissioner Grumet of a committee of the city's business and industrial leaders "to map fire prevention on a year-round basis." Says the *Times:* "If any fault could be found with Fire Prevention Week in the past, it was that its warnings received emphasis for seven days out of the 365 and then were permitted to grow dim for the remainder of the year."

In Chicago which it would appear has the inglorious distinction of leading all large American cities in the accidental deaths by fire during the past twelve months, and which provided the historical basis for Fire Prevention Week itself, the observances were highlighted by the removal of the bronze plaque commemorating the start of the great Chicago Fire from the old two-and-a-half story brick and stone dwelling at 558 De Koven street, which is said to be the site of Mrs. O'Leary's home. This house will be torn down shortly to be replaced by a new building, which in turn will bear the inscription and plaque.

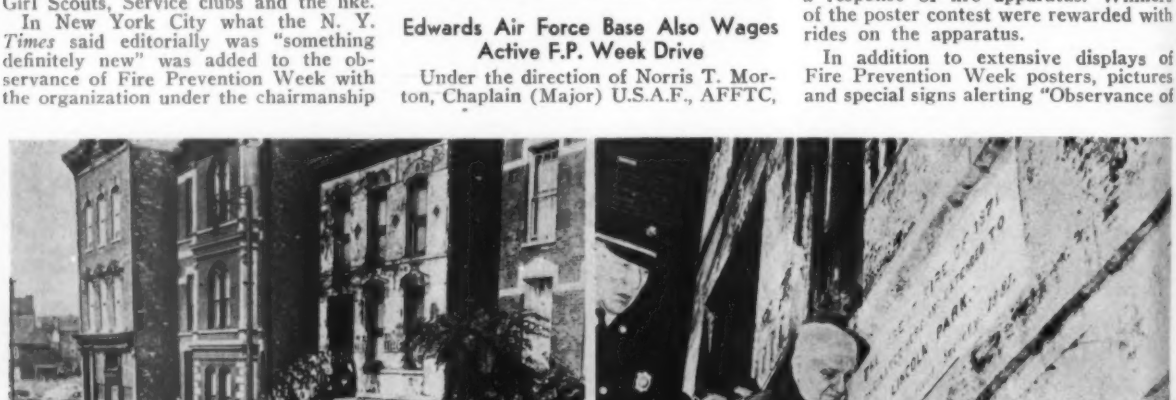
Edwards Air Force Base Also Wages Active F.P. Week Drive

Under the direction of Norris T. Morton, Chaplain (Major) U.S.A.F., AFFTC, chairman of the Fire Prevention Committee for Edwards Air Force Base, Edwards, Calif., the Base's Fire Prevention Week's observances occupied nearly every waking hour of a large part of the Base personnel.

The program opened Monday, October 5, with chapel service. The United States Air Force Band played just outside the chapel before services. Immediately following services, came a parade of fire apparatus, accompanied by the band, which toured the Base and housing area, ending at the grammar and high school. A touch of realism was added the event when, about the time the parade was finished, several pieces of fire apparatus were suddenly called back to the base on an alarm.

Department Fire Prevention models were placed on display in the Chapel Annex during the week and created much interest. Students of the elementary school participated in a special Fire Prevention Week drill followed by a response of fire apparatus. Winners of the poster contest were rewarded with rides on the apparatus.

In addition to extensive displays of Fire Prevention Week posters, pictures and special signs alerting "Observance of



Left: A fifty-year-old fire engine rolls past the old stone and brick building at 558 De Koven Street in Chicago, where the Great Fire of 1871 started. Children watching the ceremony line the steps of the building which will be razed to make way for a new structure. Right: Chicago's Fire Commissioner Michael J. Corrigan takes down the plaque from the building which marked the historic site of Mrs. O'Leary's home. It will be remounted when the new building is completed. The celebration of the 82nd anniversary of the big blaze was a highlight of the city's Fire Prevention Week.

National Fire Prevention Week" placed on the Base bulletin boards, high school students were addressed in the Elementary School auditorum.

Special film showings were conducted at the two Base Theatres. An important feature of the Week was the inspection of each building on the base by area fire marshals.

A series of lectures on different phases of fire prevention was given to all personnel, civilian and military using the theatres.

Mutual Aid Response Features Airforce Base F.P. Week

This year, numerous military installations throughout the nation conducted extensive Fire Prevention Week drives and exercises. Notable among them was Westover Airforce Base, Chicopee Falls, Mass., which built its promotion around a simulated general alarm fire and mutual aid response from surrounding cities.

The following is taken from a special report to the Base Fire Marshal from Master Sergeant Emanuel Brombert, M/Sgt. USAF, Asst. NCOIC Fire Department.

A simulated general alarm was sounded October 5 at Westover Air Force Base which gave Westover's mutual aid program its biggest test of this year.

Upon sounding the general alarm, fire apparatus from the following communities responded: Chicopee, Mass.; Holyoke, Mass., and Springfield, Mass.

Responding apparatus, which consisted of five pumping engines, two ladder companies and one modified truck with its deluge gun and foam making equipment was utilized.

Air police escorts were dispatched to the main gates to escort responding apparatus to where drill was held.

The first alarm was received at 9 A. M. Monday morning. Engine Company No. 1 (750 gpm pumper), Engine Company No. 2 (750 gpm pumper) Engine Company No. 10 (500 gpm pumper) and Fire Chief John F. Dowd responded.

Responding companies immediately laid two lines each and started pumping water. Fire Chief Dowd sounded the general alarm which put into operation Westover's mutual aid program, with nearby communities, also putting into service auxiliary firemen, who reported to drill area for assignment.

The following mutual aid equipment responded and personnel in order of arrival: Lt. Col. John Rand, Base Fire Marshal; CWO L. E. Clark, Assistant Fire Marshal; chief's car (Chicopee Fire Department); Chicopee ladder company; Chicopee deluge and foam truck; Holyoke ladder company; two pumper companies from Springfield.

As responding mutual aid apparatus arrived, they were spotted and put into service.

The Chicopee deluge and foam truck was set up and the two lines from Company No. 10 were shut down and connected to the Chicopee deluge gun.

Ladder company from Chicopee was set up as water tower and the two lines from Company No. 1 were tied in.

Holyoke ladder was set up and used also as a water tower and the two lines from Company No. 2 were tied in.

Two responding pumpers from Springfield were manned by off-duty Westover firemen to cover in at Fire Department Headquarters.

Six handlines in operation from two 750-gallon pumpers and one 500-gallon pumper at Westover demonstration.

A total of 2400 feet of 2½-inch hose was used in this drill. Pumping pressure was 90 pounds for hand lines and was increased to 150 pounds for major fire streams.

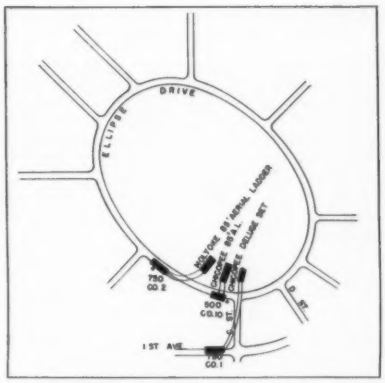
A Prize-Winning Essay on F.P. Week

It has been many years since *Fire Engineering* published one of the prize-winning essays written by some schoolboy or girl; the following is worthy of publication. It was written by a student, Judith Schultz, of Petersburg, Va., High School and submitted by Fire Chief J. N. Farmer of Petersburg. Every fire officer who promotes fire prevention and Fire Prevention Week might well adapt this to his use.

Ways of Preventing Fires

"You're driving home after a pleasant day in town. The leaves are turning and you can't help thinking how pretty they are. Maybe your children have raked them off the yard, and you can have a bonfire tonight. You're so busy thinking you scarcely hear the distant scream of fire engines. They come closer, and finally hearing them, you pull over to the side of the street to let them pass. The brilliant red vehicles streak by, flashing in the late afternoon sun. Suddenly a wave of fear hits you. You wait a minute to see if the engines turn onto another street, but no, they continue on down this one. You pull quickly away from the curb not bothering to look in your rear view mirror. "What's that crazy guy in back blowing his horn for?" You wonder, "Doesn't he know those engines are going up my street? What if it's my house that's on fire?"

Panic fills you as you think of your two little girls home alone. You had meant to get home sooner, but somehow the time had just flown. You remember the last time the children had come home from school to find you not there. Ten year old Janie had decided to surprise you by baking a cake. It had been so cute you'd never reprimanded her for lighting the gas oven when you weren't there. You really must talk to her about that, but what if it's too late? Supposing she had tried again, and there had been an explosion. Oh, no, that's



Layout of equipment at Westover demonstration.

just foolish, nothing could happen to your family. Or could it?

"Last Sunday there had been that big wind storm, and a fuse blew right in the middle of it. The children had been frightened, and wouldn't let you out of their sight, so you had sent your kid sister down to the cellar to put a new one in. Maybe she hadn't been able to find any, and had used a penny. You knew you should have gone yourself, but in all the confusion."

"You can hear the engines ahead of you. Is that smoke you smell?

"As you near home your mind is filled with so many things; those oily rags, left over from fall housecleaning, pushed back in a corner of the hall closet, the electric lamp cord under your bedroom rug. You knew it shouldn't be there, but you weren't going to have your lovely room spoiled by some hideous cord. These things seemed vaguely familiar, as though you had heard them all before. Where, where you wonder, and then you remember. It was a television program you saw the other day, something about Fire Prevention Week. "How silly," you had thought. "If a woman is a good housekeeper she won't have any fire hazards." You can still see the quiet, well spoken man in the dark uniform, as he pleaded with people to stop taking chances. He had seemed so very earnest, and perhaps a little weary,

as though he had said it over and over again with no avail. What was it he had said, about every one believing he was free from the disaster of fire until it struck? Yes, he was right, that was how you had felt, never even considering that your home and life could be destroyed by fire.

Then suddenly you're home. You park quickly, and look across the street. There's your house, not scarred by flames and smoke, but neat and sparkling white, as you had left it. In the front yard two small girls industriously rake leaves. You lean against the steering wheel, and let the tears come. 'Now, isn't that silly,' you think, 'Why am I crying?' But it's not silly, and you know why. This afternoon you had a bad scare, and you're going to see that you never have cause to feel this way again. You light a cigarette, and start to toss the match out the window. You catch yourself, however, and smiling a little, drop it into the ashtray. 'Oh yes,' you say out loud, 'it's going to be hard to break all these habits, but I'm going to do it. I only wish everyone would.'"

A Fire Commissioner Has Something to Say About the Fireman

It is always encouraging to have a fire commissioner get behind Fire Prevention Week. It is doubly helpful when that official can put down thoughts such as are contained in the following. This was submitted by Chief George J. Riley of Roseland, N. J., whose fire commissioner, Harry Lee, of Roseland, chairman of the borough's fire committee, believes that it might be well to remind people not only about observing Fire Prevention Week for themselves, but for the protection of thier firemen.

Oh, for the Life of a Fireman!

"Self preservation is the first law of nature and thousands of people prove it annually. It is easy, if we are honest about it, for most of us to follow this rule, because we are imbued with this practice, and it's the nature of us mortals.

"Nature fortifies us with a sense of responsibility, an inherent desire to protect ourselves or our loved ones.

"It is therefore the first law of nature for us to overlook the fact that there are many individuals in the world who, notwithstanding the urge of nature to protect themselves, cast it aside and voluntarily offer their lives to help others. These men deserve our praises and everlasting gratitude and consideration.

"Consider the firemen and their efforts to save our lives and our property. To my way of thinking it makes little difference whether he gets paid or is a volunteer. In either case he unselfishly risks his neck to save yours.

"Knowing this, it is little wonder that the excitement of the fire engines rushing to answer the alarm behind screaming sirens, announcing impending danger, causes most of us to pause, as the urge to rush after the fire engines consumes us.

"What lies ahead for the fireman? What misfortune or trap awaits him? What trap is ready to snap? What kind of accident or sudden death lurks in the fire, hidden by a smoke screen? Will the walls collapse? Will his lungs be seared by smoke and heat or will the sudden flash of fire and smoke snuff out his life by consuming the life-giving oxygen? Will he die saving a life, or worse, saving some materialistic things?

"What about the thoughts that run through our minds as we are enveloped in flames awaiting the firemen rushing to our aid? Heck, let's face it! Our lives and our loved ones, our property, these are the things we think of as we yell 'Firemen, save me! Save my home!'

"But how about the firemen? We can return a little of his unselfishness by thinking more about him and his loved ones. Volumes have been written about how to save our lives and property if fire overtakes us. What to do or not to do to prevent fires? However, not nearly enough has been written to appeal to our better side—to protect the lives of firemen.

"Every day people gape at the terrific damage caused by fire. A gutted or completely destroyed building. Even as they gape in amazement, grief-stricken families of firemen try to conceal their agony.

"It is not enough to write about it, to call him a hero, to tell how his life was extinguished as the fire was brought under control, how women and children were saved.

"It is my fervent prayer and hope that peoples all over who read this will try hereafter to prevent fires, realizing the danger lurking around a fireman the instant the fire alarm is turned in, as he races to answer the alarm.

"Let us resolve to think about fires before they occur, because if it is started through your carelessness and failure to follow common sense preventive measures, you may find it difficult to forgive yourself.

"As a 'fire commissioner' I see both sides. I see the causes of fires and the gruesome effects. The carelessly tossed match or cigarette, the overlooked electrical equipment, unsafe storage of materials and combustibles, the many other causes of fires resulting in havoc and destruction which could so often be prevented.

"There are no soothing words to relieve the pain of burns; seared lungs or other injuries firemen receive, nor to assuage his grieving loved ones left behind. No amount of condolences or regrets will heal his wounds or bring back his life so suddenly snuffed out.

"So, I appeal to you to be careful instead of sorry. Then you will have a clear conscience, if and when a fire does occur.

"Save the fireman's neck—so he can live to save yours!"

Rio de Janeiro Department Store Burns

Shown above is the $5,000,000 blaze which totally destroyed one of the larger department stores and damaged adjoining buildings in Rio de Janeiro, Brazil, on July 7. Twelve firemen were injured as lack of water pressure allowed the blaze to get out of hand.

Orchids to Tough Magistrate

Not long ago we told the story about Magistrate John A. Massiello of Paterson, N. J., who fined a man $500 and a year in jail for sounding ten false alarms. He also slapped a $50 plaster on another chap for causing a fire by smoking in bed.

Now Magistrate Massiello has again made the headlines, and further endeared himself to the hearts of Paterson firefighters, notably Chief Hobart Strathearn, by fining two painters each $250 for taking jewelry during a fire in that city on Sept. 4th last.

The fire occurred at 9:30 A.M. in a millinery store on the first floor of a three story building in the downtown section of Paterson. It was a smoky "worker" and all occupants had to be evacuated in a hurry, some being taken down aerial ladders.

Two Newark, N. J., painters Theodore Nelson Festa 31, and his employer Charles Dingott, 56, were painting the upper floors at the time of the fire, and left with other tenants. After the department had knocked down the smoky blaze, these men returned after being given permission to pick up their cloth paint spreads.

Noticing the office of an engraver open, they entered and appropriated some jewelry. They returned to Paterson the day after Labor Day and were picked up by Paterson police, grilled, and later confessed.

Brought before Magistrate Massiello, they were fined $250 each despite pleas for leniency from the owner of the engraving firm. Magistrate Massiello said the men had committed a grievous offense and he did not intend to encourage similar looting by showing them any leniency.

UNDERGROUND GAS BLASTS WRECK CLEVELAND STREETS

Many Casualties Caused by Flying Debris; Over a Mile of Pavement Ripped Open

ONE woman was killed and sixty-four other persons were injured, three critically, and property damage estimated as high as $5 million was done by a chain of unexplained explosions beginning at 5:15 P.M. Thursday, Sept. 10th in Cleveland, Ohio.

The first blast occurred on West 117th street, where the road dips under the New York Central Railroad. It was followed shortly by four others as the progressive destruction spread rapidly north along W. 117th street, and over nearly a mile square area.

The concussions terrorized and confused residents of the city's West Side, brought firefighters from Cleveland, under assistant chief Ferdinand Boehmer, and from suburban Lakewood, under Chief Charles A. Delaney, police, civil defense and disaster workers from eight suburbs to control crowds, restore order and untangle the resulting huge traffic jam.

The damage was divided on both sides of the Cleveland City and suburban Lakewood line. It was the third gas explosion of the summer in the city of Cleveland alone. The last one, on W. 9th street near Frankfort Avenue, injured 12 persons and was ascribed to marsh, or sewer, gas.

The first and most severe blast of the latest tragedy occurred near the junction of W. 117th and Berea road at the railroad underpass. A woman in an automobile was killed just north of Berea road by flying concrete that crushed her car. At this area, sidewalks vanished and the street shattered into great chunks of concrete with crazy-quilt patterns formed by pavement bricks. Cars were tossed over like straws in the wind, buffeted and crushed by flying masonry and concrete, the occupants of many of them pinned helplessly in the wreckage.

From Madison Avenue, the first street crossing W. 117th north of the railroad, the pavement was shattered to varying degrees for over four long blocks. Just north of Madison on W. 117th, tracks of the old carbarns were wrecked. Heavy glass damage was done to structures all along W. 117th. Between Detroit Avenue and Clifton blvd., along 117th St., destruction was widespread, practically all windows in the Dougherty Lumber Co., east of 117th street being shattered. Damage to the Nickel Plate Railroad overpass between Detroit ave. and Clifton blvd. was heavy and caused stoppage of all traffic. At the corner of Clinton blvd., a gigantic block of pavement was thrown against a W. 117th st. bus. Manhole covers popped, following the major blasts, as far as W. 104th st. along Clifton, and as far east as 110th st. on Lake st.

Following the devastating explosion, the air was filled with debris and dust. When it settled, wrecked automobiles and trucks were strewn about, with many of their occupants pinned inside. As some of the smashed vehicles took fire from ruptured gasoline tanks and lines, screams for help sounded.

Fire alarms from boxes and telephones flooded fire alarm headquarters where the operators and dispatchers quickly sifted them out, analyzed the extent and nature of the disaster, and set in motion the fire department and other emergency forces that sped to the area.

Arriving fire fighters encountered a flood of water gushing from a broken water main almost under the New York Central overpass. Another flooded area was found along Clifton blvd. In between these two points, four blocks apart along W. 117th st. were cars and rubbish burning in varying degrees, crowds milling about eager to aid but more or less helpless until the fire forces pulled in. After that it was routine—the quick search of every damaged car and of every pile of debris that looked like it might hide victims; the extinguishment of the small fires and setting up precautions against possible later blasts from escaping gas. Police and cooler headed citizens calmed the panicky residents of the area who milled crazily about, or huddled fearfully in their dwellings and shops. To many of them, it was another East Ohio Gas disaster. To others, it was an atomic attack. Only the presence of the Cleveland and Lakewood emergency forces finally brought calmness and order out of the near-chaos.

Stories of incredible escape from the effects of the explosion were described throughout the entire one mile route of the blast area. Why everyone in a city bus was not killed or critically injured nobody could guess; said a witness "it seemed as if the street tipped right over onto the bus." But its passengers scrambled out unhurt.

As city gas, sewer, electrical and other workers converged on the scene, the

A woman was killed in the smashed car (right) as a series of blasts tore up pavement at Cleveland. The explosions, which occurred either in gas mains or sewer lines under West 117th street, threw automobiles about, demolishing at least three of them.

View along a street undermined by a series of blasts which tore up one and one-half miles of the Cleveland thoroughfare, September 10. One woman was killed and at least 61 persons injured.

first efforts were directed at capping the 10-inch gas lines which burst by the concussion. First arriving fire fighters gave this danger their immediate consideration. The whole intersection of Lake ave. and W. 117th was threatened by escaping gas and firemen quickly wet down the area. Manhole covers popped skyward along Lake, as the forces went into action.

Efforts were directed also toward stopping the flow of water from a broken 24-inch main which was flooding the southern end of the W. 117th area at a rate of about 416,000 gallons an hour. Attention was also given the ruptured sewers throughout the district.

All this time the sirens of ambulances and fire apparatus summoned from a wide area were heard. The injured were rapidly dispatched to six different hospitals. Auxiliary police and civil defense workers appeared and pitched in where they were needed.

The exact cause of the initial blast was being debated days later, but it was believed to have been a spark of some sort, which ignited gases built up in a large sanitary sewer under W. 117th St. Representatives of the City Southerly Disposal Works, and of the East Ohio Gas Company, joined with other local and out-of-town officials in the investigation which followed.

Canfield Flammable Fabric Bill Approved

Congressman Gordon C. Canfield, of New Jersey, is receiving congratulations for the successful conclusion of his six-year fight to secure passage of his Bill H.R.5069, known as the "Flammable Fabrics Act." The measure was finally passed by both House and Senate and President Eisenhower's signature has made it legal.

Canfield's bill prohibits "the manufacture for sale, the sale or offering for sale, in commerce, or the importation into the United States, or the introduction, delivery for introduction, transportation or causing to be tranported in commerce or for the purpose of sale or delivery after sale in commerce of any article of wearing apparel which is so highly flammable as to be dangerous when worn by individuals," and makes each manufacture for sale, etc., a violation under the Federal Trade Commission Act.

It further authorizes the F.T.C. to "prescribe such rules and regulations as may be necessary and proper for purposes of administration and enforcement of this act," and to "cause inspections, analyses, tests and examinations to be made on any article of wearing apparel or fabric which it has reason to believe falls within the prohibitions of this act."

Violations of this act shall be a misdemeanor and persons found guilty, "upon conviction therefor shall be fined not more than $5,000 or be imprisoned not more than one year or both."

The adoption of the act climaxes a long-drawn-out struggle, full of delays and evasions, to prevent further death and injury to wearers of such garments as "cowboy suits," "explosive sweaters," and the like. Among the firefighters who strenuously backed Senator Canfield in his efforts for passage of the act was Fire Chief Hobart Strathearn of Paterson, N. J.

MILWAUKEE FIRE DEPARTMENT STARTS INSPECTIONS OF HOMES

Apparatus to Follow Men in Inspection District and Companies to Remain on Call by Radio

BEGINNING Monday, October 12, the fire department of Milwaukee, Wis. inaugurated city-wide inspection of attics and basements of private dwellings. The inspections are made by members of the department while on duty.

Special Order No. 454, issued by Chief Edward E. Wischer, outlines the procedure to be followed in these inspections. This Order is, in part, as follows:

The purpose of this inspection will be to acquaint the householder with potential fire hazards, to make suggestions and recommendations, and to answer any questions regarding fire safety that the householder may volunteer.

Members will inspect only provided they have the permission of the occupant, and will go only into the attic and basement; never into the living quarters of the home, even on invitation or request. Members will give no orders as to correction of obvious defects, but will only suggest and recommend. If permission for entry is not granted, or where the occupant is not at home, no further effort will be made to double back or otherwise cover these occupancies.

Members will always work in pairs, calling at side or rear entrance, and should remain as close together as possible while inspecting. Members will wear uniform caps, khaki uniforms, and jackets if the weather demands. Hours of inspection will be from 1:30 p.m. to 3:30 p.m. on Mondays through Fridays, with no inspections scheduled for Saturdays, Sundays, holidays, and such other days when due to inclement weather or other reasons companies are ordered not to inspect.

Rooming houses and other licensed occupancies such as four-family or more apartments, business houses, schools, etc., which are regularly inspected by the Bureau of Fire Prevention and Protection, will not be inspected under this Home Inspection program.

A schedule of the Home Inspection Districts for Truck Companies is provided, together with a schedule of the period each truck will inspect. Trucks will work on alternate weeks. An Engine Company will accompany the Truck Company, the Engine Company to be designated by the Battalion Chief. Battalion Chiefs will try to equalize the inspection time of all Engine Companies within the Battalion. Truck Companies will monitor the radio for both Companies, and will acknowledge for Engine Company while engaged in inspection duty. Whenever it becomes necessary to summon members from inside dwellings, the bell shall be used. Do not use siren. Companies will remain "on the air" during this period, and will make responses as ordered by radio.

Company offices will inform the Department Operator when leaving and returning to quarters on these assignments.

Inspections will be made only on the north and south streets at this time, and after a block is started it must be completed on that day.

HOME INSPECTION

Week of _____ 19 ___

	Total
RUBBISH	
NEWSPAPERS, ETC.,	
DEFECTIVE SMOKEPIPE	
SMOKEPIPE PASSING THROUGH FRAME PARTITION	
DEFECTIVE CHIMNEY	
IMPROPER STORAGE OF ASHES	
IMPROPER STORAGE OF FUEL OIL	
IMPROPER STORAGE OF FLAMMABLE LIQUIDS	
IMPROPER WIRING	

Form used by inspectors to record hazards.

Records and Reports

Officers of Trucks will maintain accurate records of the streets covered, in order to avoid duplicate inspections. Members inspecting will record the number and type of each defect found, using the report form provided, but will keep no record of names of owners or occupants, addresses, or any other information. Battalion Chiefs are to tabulate the totals of each type of defect found during each week, and give these totals to Assistant Chief Hoeft via telephone every Monday at 9:00 a.m.

September Fire Losses

Estimated fire losses in the United States during September amounted to $68,613,000, it was reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $68,613,000 loss represents an increase of 16.4 per cent over losses of $58,949,000 reported for September 1952, and a decrease of 36.3 per cent from losses of $107,713,000 for August (1953), which included one exceptional large loss and therefore is not considered to be a basis for comparison.

Losses for the first nine months of 1953 now total $683,345,000, an increase of 17.5 per cent over the first nine months of 1952, when they amounted to $581,739,000.

These estimated losses include an allowance for uninsured and unreported losses.

Rescue truck in New Orleans Department is also radio-equipped.

RADIO IMPROVES EFFICIENCY OF NEW ORLEANS FIRE DEPARTMENT

Three-Way System, Recently Installed, Includes Extra Transmitter to be Used if Main One Fails

THE New Orleans Fire Department, Chief Howard L. Dey, has taken a big stride forward by placing in operation a new fire department three-way radio communications system. According to Chief Dey and Deputy Chief P. T. Burke, who has been assigned as director of the communications system, this latest improvement has upped the department's efficiency rating and given the city an added measure of safety.

Safety Commissioner Bernard J. McCloskey, who played a part in inaugurating the system, calls it "a dream that came true."

The new setup provides instant, unfailing communication between fire alarm headquarters and fire houses. Headquarters now not only dispatches company crews by radio but subsequently directs them, provides them instructions or re-routes them when necessary before the crews return to their stations.

Not only are fire headquarters completely in touch with units, en route to and from fires but at the scenes of fires the new set-up does away with lost motion and running back and forth between officers in charge and commanders of individual or group units. Constant air contact between all operating forces is provided because all have use of the three-day communications facilities.

The cost of installing system, which operates on a frequency of 154.37 mc was $22,828.92. This does not include the receiving-sending sets in 77 mobile units—pumpers, ladder trucks, etc.—which already were in service when the fire department was using the police department's radio system. Police radio technicians continue to service the new installation.

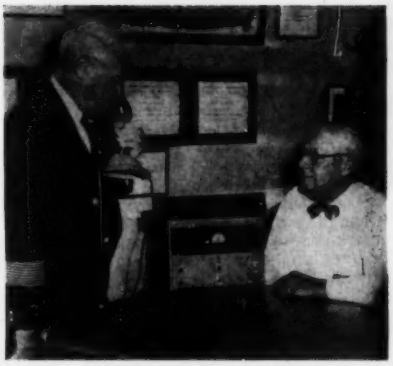
In addition to the 77 two-way sets (capable of three-way communication) there are receiving sets in the department's 41 fire stations, one in its maintenance shop and one each at fire department headquarters and the homes of the chief and deputy chief. There are also six sets on hand as spares for use in emergencies. Whenever an apparatus mobile unit fails during nights or holidays, the company carries a portable unit until daylight, at which time radio technicians make the necessary adjustments.

The main antenna and transmitter, with gasoline-driven reserve power unit, are located in the rear of Delgado Trades School. A second tower-transmitter is located atop Charity hospital for use in the event of failure of the main unit.

The department also makes use of walkie-talkies and, at a recent fire in St. John's Church, the Deputy Chief was able to keep the Chief of Department fully informed of conditions within the church's steeple by the use of these portable units.

Not many departments use radio in the initial dispatching of apparatus from fire stations, but Chief Dey estimates that the new system saves three to four minutes getting out of fire stations as compared with the old exclusive bell system. According to the chief, this newest innovation has "heightened the efficiency of the department by about 90 per cent, especially with respect to the dispatching of equipment."

Commissioner McCloskey agrees that dispatching of equipment is being taken care of adequately, but he points out that the "summoning" end of communications is largely a matter of public cooperation and he says a forthcoming survey in this latter field will determine what method will produce the best community teamwork for fire protection.



Deputy Chief Burke operates radio transmitting unit in New Orleans Fire Department Headquarters. Chief Howard L. Dey is at right.

Chief Howard L. Dey (left), Deputy Chief Burke (center) and Commissioner McCloskey inspect power plant for emergency radio transmitter at New Orleans.

Popcorn Bombards Firemen

Firemen of Engine 6, Oshkosh, Wis., Fire Department had a rude awakening at 11:17 P.M. on October 11. They were almost blasted out of their beds by an explosion in a popcorn wagon located in Miller's Ohio Street Market just north of their station at 10th and Ohio.

The firemen and nearby residents were violently awakened by what several termed a "terrific explosion." Eight windows on the north side of the firehouse were broken as were plate glass windows in Miller's store.

Fire Chief Arthur H. Apel believes the blast might have been caused by gas escaping from a leaky valve, which was ignited by a spark from the wagon's freezer motor when it turned on automatically. The chief said only a small fire followed the blast, which the firemen from No. 6 quickly extinguished.

Chicago Tenement Tragedy Claims 18 Lives

Chicago added another tragedy to its list of fatal fires on Sept. 7th, when a 63-year-old tenement burned, leaving 18 dead—five women, four men and nine children, all negroes.

They were among the 150 or more persons reported to have been in the building at the time the fire flashed through the old four-story brick structure at 3616 S. State Street. Fourteen of the bodies were found in the front portion of the building: 11 on the third floor, one on the fourth, and two on the second. Nine of the bodies were found in one room of a third floor apartment rented by one of the dead tenants. Because of the lax method of record keeping, and the fact that space in many of the 18 apartments was sublet by tenants, it was difficult for authorities to check accurately on the number of occupants and casualties.

The building, of brick joist construction typical of its time, fronted 25 ft. on S. State Street and extended 125 ft. to an alley. According to press reports, a city building department spokesman said the building was inspected Sept. 24, 1952, and no violations were reported at that time.

The fire began about 2:00 A.M., Monday the 7th, apparently in an apartment behind Alma's Tavern, a saloon on the ground floor of the building. Fire Capt.-Inspector Frank L. Hasnerl said it swept up the stairway of the old building and through air shafts to the adjacent structures, a four-story building at 3618 S. State constructed in 1890 to the south of the burned building, and a three-story brick joist structure to the north at 3614, which extended 60 feet from the street. Both these buildings were damaged, the one at 3614 the least seriously.

It was the old story of tenents awakened out of a sound sleep, choking with smoke, to struggle through dark halls in a desperate effort to find escape. Nearly 300 tenants in the three tenements fled the buildings but at least 18 failed to make it. Many leaped from upper floors. Some jumped from the lower level of a fire escape when the drop ladder did not operate. Later, it was said, someone untied a chain and it swung to the ground.

Three persons who lived in the apartments behind the saloon—a man and his wife, and a porter who worked in the saloon—were taken by police for questioning on the cause of the fast spreading blaze. Police learned that illegal wiring had been done in the building and that this caused a fire only the week before. Actual cause of the second fire was not immediately determined, however.

Fire, health and other code violations have been filed against more than 20 buildings operated by the real estate firm of A. E. Gordon & Sons, which operated the tenements. This firm was named by a Chicago paper as one of the city's principal slum operators. The firm denied there were reported violations against the 3616 building. The actual owner of the property is a woman who lives in California.

The building wherein the lives were lost had no central boiler for heat or hot water. Tenants heated their apartments with gas or oil burners. The structures are on a site marked for early clearing by the Chicago Housing Authority.

Chief Fire Marshal John Haberkorn said he thought a small fire may have burned for some time in the apartment where the fire reportedly originated. By the time firemen reached the scene, he said, the flames had carried up a rear stairway to the roof and within 20 minutes the rear portion of the building collapsed. The heat and smoke were so intense when firemen arrived, Haberkorn said, that firemen could enter only the front portion, and then only for a short time. Many tenants managed to reach the two ladder-type fire escapes on the front wall and were assisted down them by firemen. The rear stairway was the only means of exit in that section of the building. A few persons jumped from upper floors to a porch roof of the adjoining building on the north. One man jumped from a third story and crashed through the roof of a shanty behind the 3614 address. Four persons among those who escaped received serious injuries, mostly broken bones. Many others were less seriously hurt.

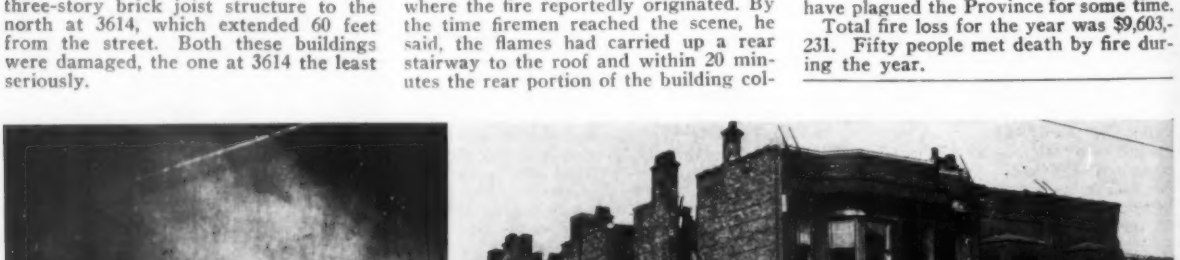
It took firefighters, responding on multiple alarms, two hours to control the flames. Search for bodies was continued in the wreckage after it had been cooled and power shovels were secured. The glare of the fire and the broadcasting of the disaster, brought some 5,000 to 6,000 curiosity seekers to the scene, giving police trouble in controlling the crowds and traffic, and clearing the way for fire and emergency vehicles.

Loss was estimated at approximately $75,000.

Losses and Fires Up in British Columbia

There were 173 more fires in British Columbia in 1952 than in 1951 and fire losses increased $998,805 for the period. W. A. Walker, Fire Marshal for the Province, in his 31st Annual Report attributes some of this increase to the Doukhobor arson disturbances which have plagued the Province for some time.

Total fire loss for the year was $9,603,-231. Fifty people met death by fire during the year.



Over 300 fled this group of Chicago tenements but 18 died. Left: S. State Street front showing involvement of tenements at 3616-3618, soon after firemen arrived. Some tenants escaped down two fire escapes shown in picture, but 18 bodies were later found in this front area. Right: Fire started in 3616 S. State (center building) and spread to adjoining tenements. Front wall-type escapes were the only one available to tenants when rear stairways became involved. Rear part of building collapsed 20 minutes after firemen arrived.

Weighing CO_2 extinguishers in fire department of Arabian American Oil Company.

Fire Fighters of Saudi Arabia

The Arabian American Oil Company has trained Saudi Arab youths in many phases of modern business far afield from the oil industry. It is not surprising therefore, that the fire departments of the Company's modern, American-style communities in eastern Saudi Arabia should be staffed by Saudi firemen.

The squads, under the supervision of American fire-fighting specialists, have been quick to learn the latest methods of combatting man's worst enemy through the proper use of up-to-date equipment. The accompanying photographs show members of the Dhahran district fire department practicing with their equipment.

The fire trucks differ from the latest stateside ones only in color. Because all Aramco operations cars must be painted red for easy viewing on the desert, the fire engines are painted white for immediate identification in the various precincts of the districts.

Saudi Arab fire fighters spend a great deal of time testing the hose and pumps of Arabian American Oil Company's fire brigade. Fire trucks here are painted white, not red.

Saudi fire fighting trainees and American Volunteer Brigade of Arabian American Oil Company practice technique in actual blaze at Dhahran's fire testing ground.

Mutual Aid Works for Runnemede

The entire business district of Runnemede, N. J., was threatened by a roaring fire that destroyed the two-and-one-half story frame Runnemede Supply Company warehouse and ruined two lumberyard trucks on August 16 last. Only the strenuous efforts of volunteer firefighters of the Borough, aided by neighboring forces, prevented a conflagration.

The fire started shortly after 9:00 P.M. from what was later determined to be fuse trouble in the electrical system. It was first noticed by a nearby resident, who notified a policeman who, in turn, ran to Runnemede Fire Hall, a short distance up the Black Horse Pike from the warehouse. The first alarm was sounded at 9:15 P.M., by which time the main warehouse was heavily involved. In less than two minutes, three units of the Runnemede department were at the scene of the fire in command of Fire Chief Harry Beeby.

Chief Beeby immediately saw the danger of the fire spreading and called for help from fire companies in Bellmawr, Bellmawr Park, Mt. Ephriam, Glendora, Barrington and Magnolia. Later, as the flames spread to the second warehouse a general alarm was sounded and the companies responded from Gloucester and other communities.

Two Runnemede units fought the fire from the Clements Bridge road side of the property, operating through the lumberyard from the south side, to prevent involvement of exposed stores. A third truck was located next to Weber's bakery where its crew endeavored to prevent spread of the flames to north and west.

It was quickly determined the warehouse could not be saved, and firemen concentrated on preserving a frame building on Clements Bridge road, which had become involved, and in killing the fire that was blistering the side of the garage of Paul Joyce. In addition, the fire was spreading toward the Black Horse Pike section of the main warehouse where more highly combustibles were stored.

About this stage, apparatus from neighboring communities began to roll in, and as they reported they were assigned to points surrounding the triangular block of which the Runnemede Supply company is the approximate center. While some companies laddered the exposures, others stretched in lines to fight the fire, and cool down those exposures. Some 24 fire companies, manned by approximately 350 firemen from Camden and Gloucester Counties at the height of the blaze operated some 14 hose lines, some of them laid across the Pike, completely stalling traffic on the busy thoroughfare.

The entire auxiliary of Oaklyn, N. J., aided local police to control the traffic and hold fire lines. Lawnside, N. J., fire officers reported in with manpower only. Gloucester city's three fire companies each sent apparatus and its township canteen furnished coffee. In every respect it was a splendid example of cooperative fire control operations.

Ten firemen suffered injuries, none of

(*Continued on page* 1058)

Barstow Volunteers Make Good Stop at Store Fire

At 3:50 A.M., Wednesday, July 1, 1953, Officers King and Lewis on radio patrol in the city of Barstow, Calif., spotted a fire in the Sprouse-Rietz 5-and-10-cent store at 231 East Main street. They radioed an alarm to the Barstow Fire Department which responded promptly with all three companies and 14 volunteers under command of Fire Chief Howard Pendleton.

The store is one of three units, typical of the design and construction of the period and of the San Bernardino County, Calif., area. It comprised the westernmost unit of the three, the others being occupied by J. C. Penney and Safeway companies. All structures are of frame construction, including partitions, one story on Main street and two to three stories in the rear owing to the grade. Entranceways off the alley lead into the basements of the stores. Roofs were of frame truss construction, tarpaper on wood.

The fire originated in one of several trash barrels in the rear of the Sprouse-Rietz store. These had been left directly under unprotected windows of the establishment.

It is believed the fire started from a match or cigarette thrown into one of the barrels. This was about 20 minutes before the officers discovered the blaze in the store itself. During that period the flames travelled up the rear wall of the store, broke the windows, and entered at the rear. From here the fire involved the area between ceiling and roof, and entered a cooling duct which vented on the roof. Another duct was located toward the front of the roof and air from this provided currents to help spread the flames through the rear of the store.

Barstow Company No. 1 was first in and stretched two 2½-in. lines with 1-in. tips into the alley. Company No. 2 followed with two more 2½-in. lines with ¾-in. tips. These lines were siamesed and laid to Company No. 1 which by that time was pumping.

Company No. 3 and Company No. 2 stretched to the front of the store following the same arrangement of hose lines. This provided a reserve to cover exposures. The fire in the alley was quickly knocked out and lines were advanced via short ladders into the store from the rear (as soon as the blaze was dampened down). Crews also worked in on the store floor from the front, after the front door was opened. Between the 'pincer' move the fire was soon under control, although overhauling and mop up took some time, and not until there was a total loss of stock and fixtures on the main floor of approximately $65,000. Stock in the basement was damaged by smoke and water.

Damage to the building itself was estimated at $14,000. The J. C. Penney Company store, next door to the east, took a $6,000 smoke loss but the Safeway store suffered no damage.

The combined value of the three establishments is reported to be $500,000. Considering all factors, the combustibility of the structures, the large floor areas, combustible stocks, time of the day, the volunteers made a commendable stop.

Assistance was received from the Marine Base and Santa Fe Fire Departments.

Conversion Program Progresses in Ontario

If the people of Whitby or any other Ontario town would like to buy the surplus hose reel and pumper of, say Windsor this fall there would be no problem, once the matter of the price was settled. This was one of the points brought out recently during a tour of inspection of the Empire Brass Foundry, London, Ontario. This tour was made by Civil Defense Director Hon. Arthur Welsh, Provincial Secretary, and his officials in the Fire Marshal's Branch. The government party were inspecting the manufacture of all the various fittings, gadgets, and other apparatus which, when installed on hydrants and fire fighting installations throughout the Province of Ontario, will result in all equipment being interchangeable everywhere in the Province.

Known as the standardization program, the immediate objective is to bring unification to the 46 different hose and hydrant coupling threads and the 26 different types of spindle nuts (for turning on water at hydrants) to one standard thread, 2½-inch size throughout the Province of Ontario.

Since there are 459 fire departments in the 900 odd Ontario municipalities, with another 350 localities under protection from fire-fighting units, and several hundreds of thousands of different couplings, outlets and hose accessories to be converted, the number of pieces of equipment which the Empire company will have to make to complete the job will be at least one million.

Directing the project, which employs three mobile converter crews, is Deputy Fire Marshal Ed. Bevis, now on loan to the civil defence authority for the duration of the standardization project.

Southwestern Ontario, major industrial center of Canada, will have completely standardized fire fighting fittings this coming autumn. This has been forecasted by Fire Marshal W. J. Scott. This area covers all of Ontario west of Cobourg and South of Georgian Bay, and this area will bring over two and a half million Ontarians under the unified system of fire protection. The size and type of thread adopted as standard was that in use in the City of Toronto and 40 other larger cities, and therefore the task of conversion was lighter than it might otherwise have been. The big industrial areas are being converted first as it is in these centers most of Ontario's new plants are locating and therefore the proper equipment could be installed in the building stage.

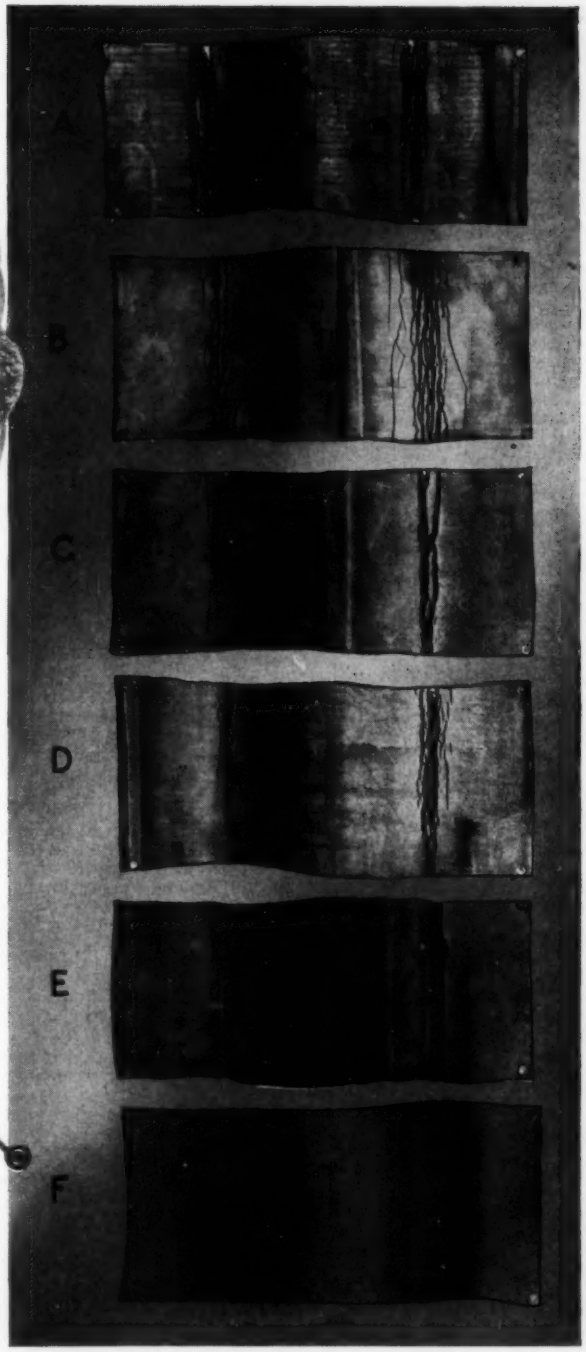
Hon. Col. Welsh expressed himself "considerably impressed" by the efficiency of operations in the manufacture of standardized fittings, and also in the conversion program. This project is paid for on the basis of two thirds by the Province and one third by the Federal government. Beyond co-operation by the municipalities, it costs them nothing for the changeover of their old

(*Continued on page* 1058)

Left: Where fire entered window on main floor from burning trash in alleyway. Right: Ready to break up after the fire in store had been extinguished. Principal loss was to stock.

BOMB TESTED

FOR LONGER WEAR



The rubber lining in a length of Eureka Fire Hose is subjected to the Oxygen Bomb Test to make sure that it has the required endurance, to resist heat, pressure and other service conditions. This lining is one reason why Eureka remains resilient, uncracked and smooth, and why it gives longer, more efficient service.

Results of Oxygen Bomb Test

Shown at the right are samples of fire hose of other makes and a length of Eureka (sample F) which was selected from stock. All were subjected to the same Bomb Test. Note how samples A, B, C, D and E have become brittle and cracked, while the sample of Eureka Hose, F, is still smooth, resilient and uncracked—visible proof of Eureka's long-life qualities!

Other Eureka advantages include the unique Smooth-Interior Filler Ply for maximum nozzle pressure, Mildew Proofing with "Formula X", Balanced Weave and Controlled Curing to eliminate excessive warping and stretching.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

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Division of United States Rubber Company

Heavy Loss at Oakland Warehouse Blaze

Investigators of fire and police departments, the Army and governmental agencies were not ruling out the possibility of sabotage or arson in the destruction of three big buildings in the Oakland Estuary waterfront on the night of Friday, Oct. 16, last, with losses reported to be as high as $11 million.

Destroyed were millions of dollars worth of supplies for the Army overseas. The burned buildings included a block-long, three-story warehouse-type structure owned by the Oakland Port Authority; a warehouse of the Allied Enterprises Export Packing Company, where Army goods were stored; and an adjacent building occupied by the Bruce Griffin Cabinet Company and the Associated Box Company. In addition, two railroad box cars on a siding next to the Allied warehouse, and a truck, were burned. Other buildings in the heavily industrialized waterfront area were threatened, and some damaged.

The fire started about 8:30 P.M., and was brought under control about 11 P.M.; however, firemen still were on the scene next day. First fire companies arriving at the scene skipped the intermediate alarm when they saw the extent of the fire, and immediately banged in five alarms, bringing out 90 firemen and scores of pieces of apparatus. The Port of Oakland fireboat fought the flames from the Estuary and several Coast Guard patrol boats from Government Island stood by.

The first alarm was reported sent in by two Patrolmen who were on duty at the Oakland Auditorium. They saw flames shoot into the sky and, by the time they arrived on the scene less than three minutes later, the whole area was a flaming mass. They radioed an alarm and fire fighters leaving their stations knew from the glare they were up against a major blaze.

Witnesses reported hearing some sort of explosion preceding the fire. One witness traced this explosion to a paint locker in the Port of Oakland building. Fire quickly enveloped the two adjacent buildings, the box car and the truck. Firemen were showered with sparks when a gas tank of the truck blew up. Sparks and embers drifted a considerable distance and some small fires were reported extinguished along the East Shore Freeway.

The blaze brought a crush of sightseers who blocked roads. It also delayed trains some three hours on the Southern Pacific Railroad.

Only three firemen were reported injured, none seriously.

Highest Structural Fire

The American fire service can boast about being first in many things, but the latest achievement to come to light concerns the Colorado Springs Fire Department, whose Fire Chief, Fred Lausch, accompanied by Lester L. Williams, M.D., responded to a blaze atop famous Pikes Peak, 14,110 feet above sea level. That's about the loftiest building blaze on record.

Two structures have been built on its summit, a stone house to serve the cog railroad, and a cinder block building with combustible interior, for the automobile toll road. The latter, about 50 x 50 feet, one and two stories, was built in 1915 and altered and enlarged in 1937. It was owned by the U.S. Forestry Service and operated by Mountain Inn, Inc. It housed a lunchroom, curio store and observation platform.

Shortly after midnight on the morning of Thursday, August 13 last, the summit house serving the automobile toll road was found to be on fire. An employe had checked the house just before midnight and found everything in order.

The fire started in the vicinity of the automatic oil heater in the main hall, and it was thought that the heater was the cause of the fire. The blaze spread rapidly through the building and completely gutted it. Leaping tongues of flame were clearly visible in Colorado Springs, 12 airline miles distant.

There was no possibility of combatting the fire, since only small quantities of water for drinking and washing purposes are available at the top of the peak, and this meagre supply must be hauled up by tank truck.

To reach the top of the peak via the automobile road entails a drive northeast of 10.8 miles from Colorado Springs up Ute Pass to Cascade, then up the 19 mile long toll road. Colorado Springs is 6,035 feet above sea level at the city hall; the top of the Peak is 14,110 feet, so Chief Lausch and Dr. Williams drove 29.8 miles to get to the fire, and climbed 8,075 feet.

Pikes Peak Summit House after fire.

During the trip the two were in radio communication with fire headquarters through FM radio Station KAF366 and, except when shielded by the mountain, reception was excellent. When the two reached the top of the peak, the summit house roof had fallen in, and the contents were pretty well burned out. The loss has been estimated at $60,000 for the building and $25,000 for the contents, the latter not being insured because of the prohibitive cost of insurance on property at the top of a 14,110 foot mountain where there is no water or other means of fighting fire.

Chief Lausch and Dr. Williams took the same road as that followed by daring automobile drivers in the famous Pikes Peak Hill Climb held each year on Labor Day. It starts at mile-post 7, an elevation of 9,402 feet, and finishes at the top of the peak. This year's winner, Louis Unser, set a new record when he covered the 12.42-mile course and climbed 4,708 feet in 15 minutes 15.4 seconds for an average of 49.2 miles per hour. The two fire-hunters took 50 minutes to travel 29.8 miles from the center of Colorado Springs to the top of the peak.

Wreckage of industrial buildings covered a wide area along the Oakland Estuary, following a six-alarm fire that started in the Hurley Marine Works and spread to the Allied Enterprises warehouse.

Maine Chiefs Elect

Officers elected at the annual meeting of the Maine State Association of Fire Chiefs Oct. 13 were: Horace Jose, Chief, South Portland, president; Chief Gayland Redman, Bucksport, vice president; Chief David Sleeper, Bar Harbor, secretary-treasurer; Steve Jones, Bath, sergeant-at-arms and Dr. Carl Irwin of Bangor, suregon.

About 60 chiefs, representing 30 Maine municipalities, attended the session in Dexter, Me. Retiring president, Chief Lewis Benn of Easton, presided at the business session which was highlighted by a round table discussion on fighting various kinds of fires, using different types of equipment.

—Jack Kearns

Snuffing out a fire's easy when you have a Kidde carbon dioxide portable handy. Just pick up, point the horn, pull the trigger. A cloud of CO_2 smothers the fire instantly.

Kidde

Walter Kidde & Company, Inc., 1133 Main Street, Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

poof!

FALSE ALARMS

The lecturer had reached one of his most telling points. "He who gives in when he is wrong is wise; but the man who gives in when he is right is—"

"Married," came a voice from the audience.

A salesman arrived home from a business trip and found his romatic young wife sitting studiously at ease near a window of their unlighted living room. "I'm sorry these trips are so long," he apologized. "You must be awfully lonesome."

"I was," she lamented, turning again to the window, "until I learned to talk to the man up there in the moon. Do you mind, dear?"

"Of course not, honey." He deeply inhaled. "Only ask him what brand of cigars he smokes."

A psychiatrist was examining a selectee.

Psychiatrist: "What's your occupation?"

Selectee: I'm a gag writer for radio."

Psychiatrist: "Let's see you invent a gag."

Selectee (rising slowly, goes to the door and looks down at the long line of other selectees): "O. K. you guys can go home now, the job's taken."

Have you heard about the $50,000 boom that hit Plymouth, Wisconsin? A 16-year-old marksman shot at a sparrow perched on a truck. He missed the sparrow, but scored a direct hit on the truck —which was loaded with 1300 pounds of dynamite. The only casualties in the explosion that followed were 650 windows and one truck. The sparrow is listed as Missing in Action.

"Everyone else is out but this bunch won't give me a tumble!"

A society girl says that she has read so much about the bad effects of smoking that she has decided to give up reading.

A mother, her arms filled with groceries, got on a bus with her daughter, about five. The girl had the fare and dropped it in the fare box, then seemed to feel that a word of explanation was in order.

"I'm paying the money," she told the driver in a voice clearly audible at the back of the bus. "My mother is loaded."

Mother to daughter coming in late: "What makes your right shoe muddy and not your left one?"

Daughter: "I changed my mind."

"Are you keeping a hope chest?"

"Heck no; with a chest like mine there ain't no hope."

Mrs. Jones was talking on the telephone the other afternoon when her eight-year-old daughter, Betty Marie, came in from outside, wearing a snow suit.

Mrs. Jones turned to Betty, "If your pants are wet," she said, "take them off."

"I beg your pardon!" said the voice on the other end of the telephone.

Said one Turk to another: "I can't remember your name but your fez is familiar."

"That new volunteer has a lot to learn. He's the bouncer at El Chico Cafe!"

Moonshine

A hillbilly came to town carrying a jug of liquor in one hand and a shotgun in the other. He stopped a man on the street, saying—"Here, friend, take a drink outa my jug."

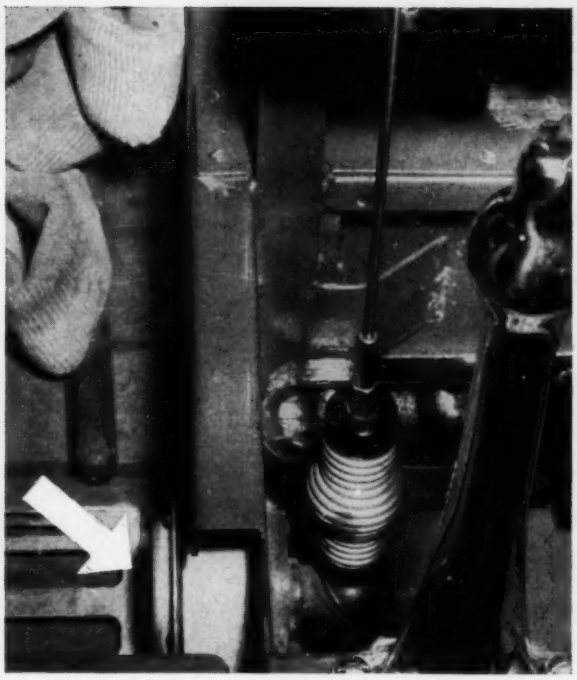
The man protested he didn't drink.

The hillbilly leveled his shotgun at the stranger and said—"Drink."

The stranger drank, then he shuddered, shook, shivered and coughed. "Gad, that's awful stuff."

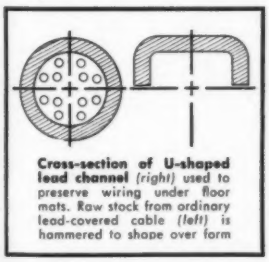
"Ain't it?" said the hillbilly. "Now hold the gun on me until I take a gulp."

Use of top-grade equipment, cleanly installed and carefully maintained, has sparked Cleveland Fire Department's reputation for efficient service



Arrow points to regular 4-inch conduit box at base of mobile radio antenna. Use of rubber gaskets makes conduit boxes completely weatherproof

High installation standards...RCA mobile equipment give Cleveland Fire Dept. trouble-free communications



Cross-section of U-shaped lead channel *(right)* used to preserve wiring under floor mats. Raw stock from ordinary lead-covered cable *(left)* is hammered to shape over form

"Make it right in the first place," advises Charles G. Harris, Superintendent Fire Alarm System

"No exposed wiring is our first rule," says Chief Harris. "We use regular 1-inch conduit to carry all wiring, including battery cables. To preserve connections which are exposed to weather, we use regular 4-inch conduit boxes—*never tape.* We weatherproof the conduit boxes with rubber gaskets.

"We adhere to several other basic installation rules, too. For example: Never run a hot wire under a vehicle unless it is fused close to the power source. Always use porcelain bushing to wire through a wall—tape wears away too rapidly under normal vehicle movement. Always cover cables under floor matting with U-shaped lead covering—it saves wear, keeps out dampness. And most important, *use mobile radio equipment you can count on.*"

Actual operation in many installations has proved that RCA 2-Way Radio stays on the job at those critical times when you need good communications most. Units are built to take rough riding, motor vibration, extreme heat and cold. They require a minimum of outage time for service and repairs. Simplified construction permits quick installation behind the driver's seat, in compact weatherproof boxes on the running board (older apparatus), or in any convenient space.

Whether your operation calls for RCA *Fleetfone* (30-50 mc), *Carfone* (152-174 mc) or new uncrowded UHF (450-470 mc) communication equipment, there's an RCA unit to do every job right. Each is backed by 25 years of intensive practical experience in manufacturing *radio* and other electronic equipment. *And remember,* nation-wide service facilities are provided by the RCA Service Company.

To get the full installation and maintenance story of the Cleveland operation, send the coupon below for our *free* reprint, *"Cleveland Fire Department's Prescription for a Trouble-Free Two-Way Radio System."*

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COMMUNICATIONS EQUIPMENT CAMDEN, N.J.

Dept. 50-W, Building 15-1

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City_____ Zone____ State_____

☐ Have an RCA representative get in touch with me.

Among the Buffs

By Paul C. Ditzel

LIKE my close newspaper pal, Oswald Pompier, was telling me the other day —a newspaperman never knows what he's going to find when he opens his mail. Take the other day, for instance. A big package arrives containing blueprints for a new kind of a fire hydrant. For once this is an affair which will go equally as well in Dalmatian circles as it will with second-alarm firemen. Fact, one of my dog fancier friends was telling me just the other day that he had a complaint about fire hydrants . . . but that's a story for a future column.

Seems that an architect named George H. Martin of Bogue, Kansas, has come up with what he believes is the most revolutionary fire plug since Hector was a Pup. But let's let Firefan Martin describe the device himself:

"At the start of World War II, I joined the Kansas City, Mo., Fire Department as an auxiliary fireman. While doing the work of a regular fireman I was caught in several hot spots while our big line was shut down so an added alarm engine company could place their pump to work on our line.

"To avoid this shutdown I got the idea of a new type hydrant. I am enclosing a blueprint which explains the hydrant, its features and a few of its many uses."

Brother Martin now is looking for a manufacturer to sell the hydrant on a royalty agreement and hints that he'd be willing to travel most anywhere to find a buyer. Now when it comes to such things as mechanics of fire hydrants. I'm strictly a Zeppelin head, to quote Max O'Brien, soon to become the Kansas City head of American LaFrance. If there are any takers, drop George a line. Too, you might mention this column. I, myself, would like to go down in history as getting an assist for furthering the aims of the fire service. Would make a good name for this column, too.

'Bout the same time the fire hydrant package hit my coffee-stained desk in the city room, I got a whopper from Harper Bros., who sent along a copy of Paul Kearney's new book, "Disaster on Your Doorstep." Next to helmets and turnouts, this is an essential part of every buff's gear. Don't write me for copies—I'm still in the newspaper business and therefore a competitor. A cursory reading shows that Kearney's book contains all the ammunition you'll ever need to further the cause of fire prevention, which after all is the end result of your buffing activities. N'est-ce pas? That's Firehouse French for, "Go out and get a copy! It's only $3.00." Harper's also sent me a copy of their new book, "The International Labor Movement," which already has been tabbed for comment in my daily labor column. If Sen. Joe McCarthy is reading this—I'm only fooling, Joe.

And now for the time that the mails will allow:

From Harvey H. Larrabee, P. O. Box 102, Jackson, Mich. He's anxious to correspond with fans who would like to trade fire photos and artwork on apparatus. He says he's going to dispose of 2000 photos and would like, in exchange, shots of horse drawn or early motor apparatus.

Kenneth Tindall, Second Assistant Chief, Lenola Volunteer Fire Co., No. 1, Moorsetown, N. J., would like to hear from buffs who could give him information on California's fire equipment, specifically from fans in severe brush fire hazard areas. He'd like to know about the typical California tankers. Stand by, Brer Tindall, I'm going into high gear on Los Angeles' Mountain Patrol and should have an article on it in this journal within the next few months. I will, that is, just as soon as the labor news slows down locally.

Robert E. Taylor (no relation to the actor) of 673 W. Glendale Rd., Bedford, Ohio, announces the formation of Cleveland's first buff organization. It's the Cleveland Fire Alarm Club, Inc., and already has nine members. President is Robert S. Williamson. They're notified on all third alarms or greater and members assisted at the general alarmer at the Dougherty Yard some months ago and at a west side sewer explosion.

Friend Taylor says the group's current project is location of suitable quarters for a proposed collection of firefighting relics, news, pictures. The place will also be used for meetings. The group's charter is patterned after New York's Fire Bell Club.

Oh, yes, a visit too, recently from James G. Moulton of the Jordan Marsh Co., and also an active member of the Box 52 Association and Tapper Club of Boston, Mass. Unfortunately I was out covering a story when Jim dropped by the city room.

OREN

FIRE APPARATUS

"COMMERCIALS"

Oren policy is to make NO differential between the Commercial-Chassis mounted Apparatus and its Custom-Built Apparatus; you get the same:

- PUMP AND EQUIPMENT
- DESIGN AND WORKMANSHIP
- MATERIAL AND FINISH

If your next apparatus is to be a "Commercial"
Write for Details

OREN ROANOKE CORP.
ROANOKE 16, VIRGINIA

Might as well get a little foreign news in this clambake, too. From Geoffrey F. D. Pratt's excellent publication, "Fire Protection and Accident Review," I note an article about the fire brigade at the Pilkington Brothers' glass works in St. Helens, Lancashire, England. The factory is the largest of its kind in the country and its employes are paid a reward when they call out the fire brigade. Each employe gets two shillings, old top, for pulling the hook.

"There is no abuse and the award made to each employe who turns in an alarm is a powerful incentive towards all-round watchfulness. Equally important, it helps to reduce delayed alarms," says Superintendent J. Pemberton. Wonder what would happen if they had a few American fire buffs working in that plant? And how do they determine who gets paid when a handful of alarms are turned in?

While I mull that one, I'll return to my glass of ginger ale and begin wondering what I'll say in this same spot at this same time next month. If you have any suggestions, send them along to me at the following hangout: Paul Ditzel, Labor Editor, Los Angeles Daily News, Los Angeles 54, Calif. Anybody want to send me a new type fire engine to match Martin's fire hydrant? The same applies to spare $1000 bills.

First Arizona Fire School Has Enrollment of 247

Arizona's first annual State Fire Training School resulted in statewide attendance beyond all expectations. 247 representatives of the fire service, industry and allied organizations registered for the two and one-half day school which was held in Phoenix on October 15-17.

The Honorable Howard Pyle, Governor of the State of Arizona, formally opened the school, and greetings were also extended by officials of the City of Phoenix and the Arizona State Department of Vocational Education.

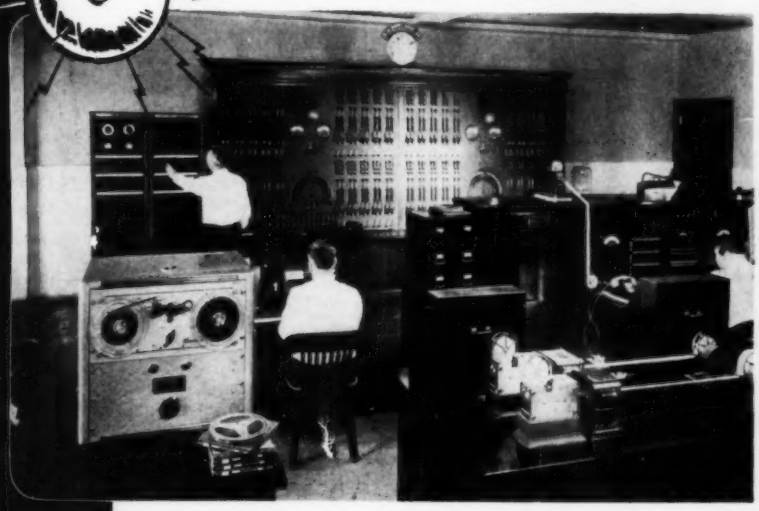
Classroom instruction was given in the Phoenix Technical School auditorium and included fire fighting strategy, methods of teaching, use of breathing apparatus, and a firemen's knowledge of arson. The need for emphasis of basic fire fighting fundamentals in a firemen's training program was outlined in an opening day talk by Loren S. Bush, Chief Engineer of the Board of Fire Underwriters of the Pacific.

On Friday afternoon and Saturday morning, Thomas S. Ward, Supervisor of Fire Training of the California State Department of Education, directed instruction at the Phoenix Fire Department drillgrounds. Conferees observed and practiced correct procedures of making hose loads, hose lays, hydrant hook-ups, handling ladders and constructing emergency pumper suction pumps.

The highlight of the session was the U. S. Navy "Fire Power Show," a two-hour demonstration of 28 phases of the hazards of flammable liquids in the home and on the job. A packed auditorium closely watched M. R. Smith, Fire Prevention Chief of the Naval Air Station, San Diego, ignite gasoline fumes with static electricity, prove the flammability of hair lacquer and illustrate other similar common hazards.

Next year's school is scheduled for October 14-16, in Phoenix.

Magnecord answers the call for the New Haven Fire Department



Magnecorder AUTOMATICALLY RECORDS ALL INCOMING EMERGENCY CALLS

Chief Operator Thomas F. Parks demonstrates how Magnecorder keeps a "living" record of emergency calls for the New Haven (Conn.) Fire Department, in the system installed under Chief Paul P. Heinz. Each phone call received on the department's "emergency fire call" number starts the tape recorder. Every syllable and voice inflection is flawlessly preserved to protect the city and department against complaints. Tape reels are saved one month, then re-used again and again.

Fire and police departments naturally choose Magnecorder, the world's most widely used professional tape recorder, for rugged, dependable, heavy-duty service. The versatile PT6-AH Magnecorder used by New Haven is standard broadcast equipment, providing wide-range response up to 15,000 cycles, low distortion, and precision accuracy, at the moderate cost only Magnecorder offers. PT6-AH monitors one or two channels. Other equipment combinations available for every tape recording need.

PT6-AH

Look for your dealer under "recorders" in the phone book, or write directly to

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The New GA-8

PACIFIC PUMPER

Now in regular service and field tested and approved, the new "GA-8" is showing itself to be another top performer in the famous PACIFIC PUMPER line.

With or without electric starter* the lightweight "GA-8" is especially adapted to tanker use . . . as a portable unit the special sled-type mounting means easy handling in rough terrain. Light enough to be readily carried, the air-cooled, 4-cycle engine develops top volume and pressure for its weight.

The engine and pump are standard Pacific Units and have been fully tested and approved.

**Optional equipment.*

DIMENSIONS

Length	28¼ inches
Width	19¼ inches
Height	24¼ inches

NET WEIGHT

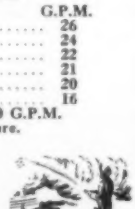
GA-8 (without starter)	115 lbs.
GA-8-S (with starter)	140 lbs.

PERFORMANCE

Pressure	G.P.M.
50	26
100	24
150	22
200	21
250	20
300	16

Normal operation is 20 G.P.M. at 250 lb. pressure.

PACIFIC "Pacolized" Hose



is a made-to-order partner for all portable or emergency water supply equipment. "Pacolized" Hose is permanently mildew-proof and rot-resistant. Made from "line" flax fibers it is the most flexible hose of its type, lightweight and easy to carry.

Specify "PACIFIC" Pumpers, Hose and accessories. Write for information on the new "GA-8" and the full line of PACIFIC fire equipment, perfected for portability and high performance.

PACIFIC *Marine Supply Co.*

FIRE EQUIPMENT DIVISION

SEATTLE 1, WASHINGTON

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Right Spot for a Quick Sale

Out Wellington, Kansas, way, a fire extinguisher salesman, J. P. Haworth, picked the right spot to make a quick sale, on Aug. 7th, last.

He was standing in the front yard of the Theodore S. Lungren farm giving the old sales patter to Mrs. Lungren, when a gas explosion occurred in the house.

Salesman Haworth grabbed one of his samples, dashed into the house and put out the fires which had started in the basement and kitchen.

Nobody was injured but there was plenty of excitement to go round. Uh huh—the Lungrens bought two extinguishers.

* * *

Firemen Nab Bedroom Prowler on Firehouse Roof!

Two members of Ladder 40, New York City, Lieut. Walter J. Weiner and Fireman Walter P. Masterson, were alerted by a woman in nighclothes early in the morning of Sept. 20th, and hurried to the roof of their fire station at 6 Hancock Place, Manhattan, where they nabbed a youth who, police said, had a few minutes earlier invaded another woman's bedroom.

The occupant of a third floor apartment across from the rear of the firehouse was awakened by a noise outside her window at 2:00 A.M. She looked out and saw a man climbing the fire escape to the firehouse roof. She ran downstairs and notified the house watch of the company and, as a result, fire fighters grabbed one William Rose, 18, who said he had been drinking and didn't know how he got onto the roof.

Detectives said Rose earlier had entered a bedroom of an apartment on Morningside Ave., but fled when the woman occupant screamed. The youth was armed with a blackjack when collared. He was held in Felony Court on $500 bail.

* * *

Chester Fire Units Suspended

Two of the four fire companies of Chester, Pa., were suspended Sept. 14 in what Fire Chief James a Devlin described as a "disciplinary action" because firemen of the companies took city-owned equipment to a parade in Wilmington, Del.

Chief Devlin, in suspending the Franklin Fire Company and the Moyamensing Hook & Ladder Company, ordered that members of the volunteer groups can do no fire fighting for 90 days. In addition, each company will have $15 a day subtracted from its annual appropriation from the city during the three-month period.

Asked what would happen in the event of a major fire in Chester (pop. about 75,000), the chief said "we will call upon the six companies in communities on Chester's borders and, in addition, there are 62 other companies in the county." The chief said the "sneak" appearance of the companies in the Wilmington parade on the 12th violated a city law that prohibited city-owned fire apparatus from being taken out of the city.

* * *

What to Do to a Skunk—Extinguisher!

This lets the cognoscenti in on a new use for CO_2 fire extinguishers. It comes via Gerald B. Spotts, of North Chili, N. Y., who vouches for its authenticity.

Says Brother Spotts, "I just finished recharging the fire extinguishers at Roberts College, a local institution . . . and when I came upon an empty 15-pound CO_2 I asked the reason why.

Seems that a skunk had decided upon the college fruit cellar as his or her winter home. All efforts for eviction were in vain. The unwelcome visitor was in a position that did not permit its being shot, due to the food stored, nor could any gases be used; smoke was also impossible as the cellar is in the administration building. .

Finally one of the students picked up the CO_2 and the war was on. Within seconds the skunk was out, cold. They froze him so stiff that he couldn't move his tail, then went in and carried him from the building.

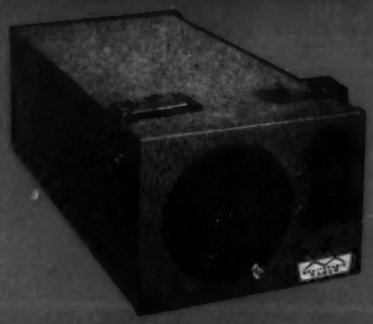
* * *

Hot Off the Tape

The millenium has arrived! Out in Paso Robles, Calif., an elementary school burned down while students were on vacation. The children, instead of shouting with glee to see the building go up in smoke, hurried to the scene and helped firemen and policemen to carry out desks, books, supplies and equipment valued at many thousands of dollars. . . . In Huntington, . Va., making a routine check of a local restaurant, two patrolmen spotted a fire inside. They forced their way in and emptied a fire extinguisher on the fire without success. Then they put out the blaze by pouring buckets of beer on it. Where were the Brothers betimes? . . . All Madison, Ind., fire fighting units hustled to Engine House No. 1 Oct. 10th when an alarm was turned in. The firemen found Fire Chief Harold Lohrig standing sheepishly beside an alarm box. Yeah—he accidentally set it off while showing a citizen how it worked. . . . Don't mention honey around the fire-fighters of Mt. Pleasant, Mich. Swarms of bees, angered by a grass fire that swirled around their hives Sept. 3rd, routed scores of firefighters who were attempting to save their—the bees'—rural homes. Several of the brothers were badly stung before they gave up efforts to stamp out blaze on a five-acre area. They let the bees buzz by and concentrated on saving the house. Finally they plowed a furrow around the fire and that ended it—and the bees' homes. . . . In Newark last August, 1,100 lambs awaiting slaughter died when a flash fire of undetermined origin swept through a livestock shed. The "chops" were valued at $25 each on the hoof. Seventy-five lambs escaped death by fire for a later fate, by leaping over a 5-foot fence. . . . Baltimore, Md.'s 95-year-old fire department has its first Negro fireman. Ten Negroes

were among 46 new fire fighters named by the fire board Oct. 15th. The man with the highest score on the eligibility exam was Charles L. Scott, a Negro. . . . In Denver, Colo., Gretchen Byrne, aged 3, locked herself in the bathroom. For nearly four hours she resisted the pleas of her grandma to open the door. Grandma finally called firemen, who also pleaded in vain. Finally Gretchen's dad, who had arrived, called sternly through the keyhole: "Come outa there!" Gretchen emerged pouting. "I wanted firemen to knock down the door" she said. Ah feminine pulchritude. . . . In Montreal, an estimated 40 horses were burned to death Oct. 14th last when a $1 million fire razed much of Richelieu Park harness racing track property. There were 225 horses quartered there when the fire started in a stable shortly before 6:00 A.M. and spread rapidly through the wooden buildings. Animals, turned loose by stablehands, blocked the main Montreal-Quebec highway. . . . A simple fire in a sofa (three guesses as to how it started) in a Bronx basement apartment Oct. 10th took lives of a man and woman. . . . An 80-year-old "baby brother" saved his three sisters aged 81, 82, 86 in Cleveland last summer when fire struck their eastside home. . . . Flames swept through a barn near Fayetteville, Tenn., on Aug. 20 last killing 15 registered Hereford bulls valued at $100,000. . . . Binghamton, N. Y., firemen said that the home of Mr. and Mrs. J. F. Ketchen caught fire on Sept. 23rd causing $4,000 damage. Cause of the fire was the sun's rays shining through glass jugs and milk bottles on a vacuum cleaner dust bag. . . . The Flatbush fans weren't the only ones "burned up" by the World's Series. Out Ivanhoe, Ill., way, the Cecil Pinkous family "saw red." While they were watching a telecast of the Oct. 1st game, a passerby rushed in and announced that the house was on fire. Mr. Pinkous and his wife and their 10 children escaped uninjured. They salvaged only a few belongings (wonder if among them was the TV set?) The house was destroyed. . . . In Hastings-on-Hudson, N. Y., William K. Drewes was curious to learn where the fire was when he heard the siren blow while he was shopping one evening. He followed four engines and a ladder company to his own home, where he watched as firemen, led by Chief Aresta Alusio, poured water into his 2½-story house. Mr. Drewes, an art appraiser, and the Chief estimated the damage at $10,000. . . . In Van Nuys, Calif., thousands of TV tubes exploded like popcorn Sept. 9th as a $500,000 fire swept through the Pacific Mercury Television Co. . . . In San Francisco, the roof on Jack Murphy's home burst into flames one day last summer for the fifth time in as many years. Mr. Murphy is a fireman! . . . A doff of the topper to telephone lineman Victor Van Meerbeeck who had to go up when flames ate at the base of a pole on which he was working. He hustled to the top, tapped a telephone line and called firemen, who extinguished the blaze which had started in a rubbish heap. . . . If the Russians have not already claimed it, a fireman in Norfolk, Va., is making claim to be the first one to make a 3-dimensional talk. You guessed it—the subject was "Fire Prevention" (Thanks DEPUTY CHIEF H. S. BEALL).

THERE'S A FIRST TIME FOR EVERYTHING



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MODEL FMC 1-L-6
Single Frequency 30-50 MC

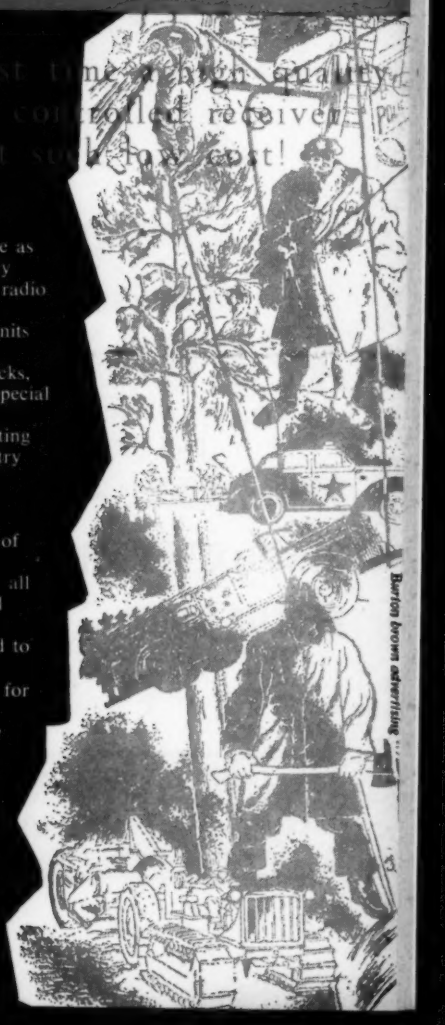
MODEL FMC 1-H-6
Single Frequency 147-174 MC

NOT a Converter!
BUT a completely tamper-proof, self-contained receiver!

...and this is the first time a high quality mobile FM crystal controlled receiver has been offered at such low cost!

Both of these units are invaluable as additional receivers for separate frequency channel monitoring to supplement 2-way radio communications systems. They are ideal as monitors of 2-way systems in mobile units not requiring a transmitter. Perfect for dispatching service cars, ambulances, trucks, buses, salesmen, civil defense personnel, special investigators, special police, volunteer firemen, fire truck units, taxicabs; for alerting industrial power and public utilities, forestry and railroad personnel, or use as a Walkie-Talkie monitor. They can be used for intercom between vehicles on two frequency systems. These are only a *few* of the uses that are limited only by the imagination! They are housed in durable, all metal cabinets. Simple to install, universal mounting... you have nothing to adjust! All units are shipped with crystal installed to order and aligned to frequency. Available in both 6 and 12 volt versions for 6 and 12 volt battery ignition systems.

For information on complete line of fixed and mobile communications receivers, write for form 22.



Burton Brown advertising

RADIO APPARATUS CORPORATION
MONITORADIO

Questions and Answers

Centrifugal Pump Performance

To the Editor:

We have a two-stage centrifugal Class A Pumper rated at 1500 gpm at 150 pounds pressure and 2560 rpm. We had two single lines off, each line being 100 feet long of 3-inch rubber-lined hose, into two multiversals, each with a 1¾-inch nozzle. The pumper, connected to a hydrant with 85 pounds hydrant preesure and a residual pressure of 60 pounds, was pumping in pressure position at 175 pounds pressure and with a reading of 2400 rpm approximately on the tachometer. Pitot gauge reading on each nozzle was between 55 and 60 pounds. The pump operator could not get over 175 pounds engine pressure.

1. Are we right in assuming that we could not get over 175 pounds engine pressure because the pumper, under the conditions outlined, was already delivering its full rated capacity?

2. And if so, are we further correct in assuming that the discharge would be 1300 gpm approximately (using the method of solving for discharge from a pumper at a given pressure, when rated capacity and rated pressure are known, by multiplying rated capacity by rated pressure and dividing the product so secured by the pressure at which the discharge is to be determined)?

3. If we assume No. 2 to be correct, isn't this conclusion in apparent contradiction with the fact that when operating a two-stage centrifugal pumper in pressure position the output is equal to the designed capacity of either stage, which in our case would be 750 gpm? C.R.

Answer 1. When the pumper is operating in "pressure" it should not be expected to give more than 70 per cent of its capacity at 200 pounds. As the pressure of 175 pounds would fall in the "pressure" classification, the pumper could not be expected to discharge 1500 gallons per minute.

Answer 2. The method of finding the discharge from a centrifugal pump at other than rated pressure, which you describe, is a theoretical operation but does not give actual results. You will appreciate that you cannot get a discharge at 175 pounds, for example, which would represent the same horsepower as rated discharge at rated pressure.

Answer 3. When a 2-stage centrifugal pump is operating in "pressure" position, the two stages are in line, that is, in series. The discharge from one enters the inlet of the other so that actually the total capacity would be the capacity of one stage. When the two stages are operating in parallel, then the total capacity is the sum of the discharges from the two stages. When you change from "capacity" to "pressure," you change the stages from parallel operation to series operation, and the discharge capacity is actually the capacity of one stage.

"False and True" Statements

To the Editor:

I would appreciate your giving me the correct answers to the following "true and false" statements:

1. Double the pressure and you double the reach of the stream.

2. It is better to pull hose off apparatus in folds than to have hose played out as apparatus moves forward? Explain.

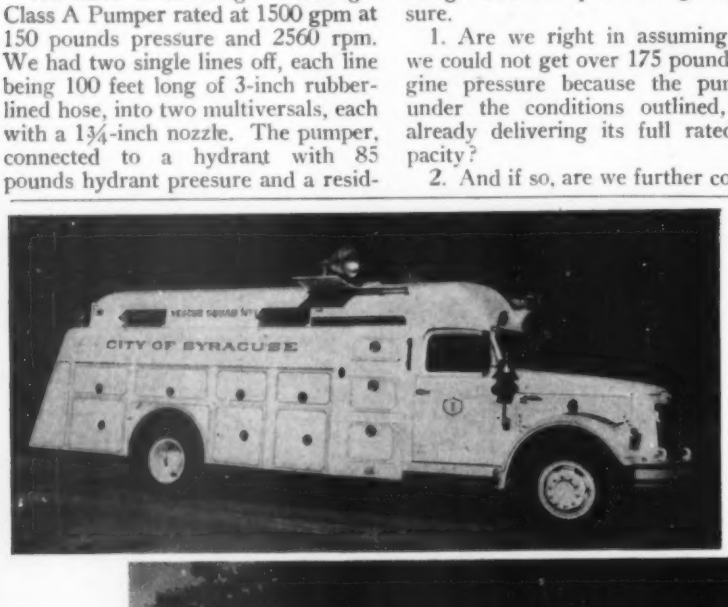
3. Radiant heat can be stopped by the atmosphere.

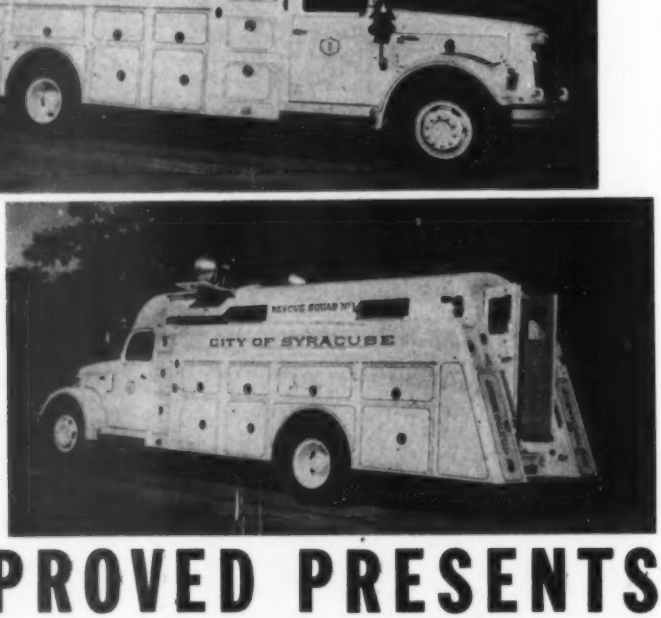
4. Alcohol is soluble with water.

5. Most substances that burn contain principally carbon and hydrogen.

6. (a) A pressure regulator operates a churn valve automatically on a centrifugal pump. (b) Is a pressure regulator on a positive displacement pump a relief valve?

7. Vertical streams have 10 per cent less effectiveness than horizontal streams at 50 pounds pressure.





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SENIOR MODEL — As shown in above photograph 28000# Gross Vehicle Weight — 200 H.P. Engine.

STANDARD MODEL — 22000# Gross Vehicle Weight 155 H.P. Engine

RESCUE MODEL — 11000# Gross Vehicle Weight 108 H.P. Engine

Write for Specifications of the Model in which you are interested

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ROCKVILLE CENTRE • NEW YORK

8. Fires that extend above the roof are better, as the heat rises.

9. To bend two ropes means to twist them in the same direction.

10. Combustion includes chemical action with oxygen and combustion.

11. The best location for a tank of flammable liquids is inside a building.

12. In a recent examination something was asked about an "overhead switch and would it prevent arcing." Could you explain this?

13. Heat radiates in straight lines the same as light, and would be stopped by an opaque body.

14. The mechanical foam liquid would not be impaired by the freezing and thawing it may encounter in extremely cold weather. (Would it affect the quality of the foam?)

15. A fog stream may be regarded as a good utility stream, good for extinguishing any type of fire.

16. (a) A solid stream can be used on gasoline fires. (b) It can be used to push back flaming gasoline.

17. Kerosene is a high flashpoint liquid.

18. A suction hose should be fastened with a rope to take the strain off the pump connection.

19. The hotter the water, the more difficult it is to draft.

20. When data on the efficiency of a pumper is not available, it is safe to assume that the capacity of it is about 80 per cent, providing this does not exceed 1,000 GPM.

21. Pump type extinguishers are just as effective as soda and acid extinguishers.

22. Tempered glass doors are best opened by pulling the lock in.

23. Some fires in substances miscible with water, such as alcohol, can be extinguished wit' water.

J. P. M.

Answer 1. False.

Answer 2. Playing out hose from moving apparatus and removing it in folds are done for two different purposes. If the apparatus is rolling to the fire, the end of the hose is anchored around a hydrant and the hose played out as the apparatus rolls in.

On the other hand, where the apparatus is going from the fire to a hydrant, surplus of hose is pulled off in folds and then the hose is played out as the apparatus progresses toward the hydrant. For a long stretch it is much quicker to play out the hose than to try to pull it off in folds and subsequently straighten out the line. Furthermore, if this method were followed, it would be necessary to drag the hose some distance along the pavement to straighten the line and to remove excess length, whereas when it is played out from the apparatus, it is already in position for operation and no dragging of the hose over the pavement is required. From the above, you can draw your own conclusions.

Answer 3. False. Consider the radiant heat from the sun. It is not stopped although it travels through the estimated 500 miles of atmosphere around the earth.

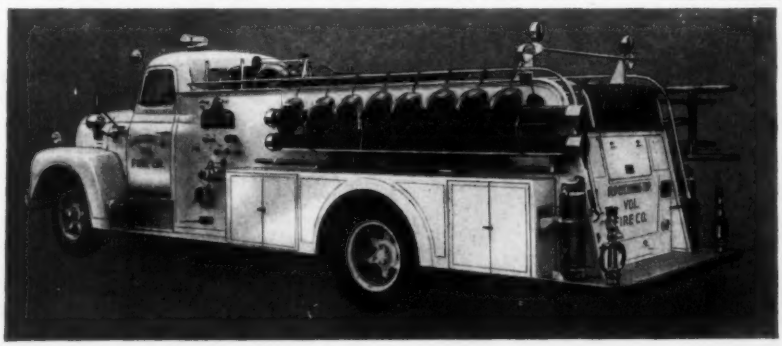
Answer 4. True.

Answer 5. We believe this question should be answered "True." It is assumed that the substances mentioned will be burned in the atmosphere and will thus have the necessary supply of oxygen.

Answer 6. (a). The I. A. F. C. publication "Fire Department Pumps, Pumping Equipment and Pumping" has the following to say about automatic pressure regulating on centrifugal pumps: "Centrifugal pumps are frequently provided with automatic relief valves similar to those used on displacement type pumps. Lacking a relief valve, some other form of pressure regulator should be provided." At present, automatic relief valves on positive displacement pumps are a combination of an automatic relief valve and manual churn valve. The automatic relief valve performs the same operation in by-passing the water from the discharge to the suction that the operation of the manual churn valve would perform.

(b). Yes. It is an automatic relief valve which carries the water from the discharge side of the pump to the suction side.

Answer 7. The intent of this question is not clear. Vertical streams would be used for one purpose and horizontal streams for another. Thus they could not be compared in effectiveness on the same fire. Furthermore, for a given nozzle pressure you would have a greater range vertically than you would have



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horizontally, where the distance is measured to the point in the stream where its effectiveness falls below a point considered desirable.

Answer 8. For fire fighting operations it is probably better to have the fire through the roof and into the atmosphere above than have it closed in. Ventilating performs this operation and makes it easier for the fire department to get in and operate at close range. If we are to assume that by your statement you mean fire has gone through the roof and is out in the open, then this question should be answered "true."

Answer 9. False. When two lines of ropes must be spliced together, a bend is used and this is commonly called bending two lines together. The sheet bend is very similar to a bowline knot. To execute this bend with two ropes, which we shall label A and B, form the loop in the end of A, pass the end of B through the loop from the under side over the end A and around the line A placing the end under the line B, which gives the finished bend. The double sheet bend differs in that two turns are taken around the loop in place of one. The advantage of the sheet bend is that it does not jam easily.

Answer 10. We are of the opinion that the second use of the word "combustion" is an error. Combustion includes chemical action with oxygen and a combustible material.

Answer 11. False.

Answer 12. We are not familiar with the "overhead switch." It is possible that it is used in connection with outdoor switching stations.

Answer 13. True.

Answer 14. True. The effect is not impaired by freezing and thawing.

Answer 15. False. Fog streams are not effective on gas fires under fairly high pressure nor are they effective on butadiene and other similar highly volatile flammables.

Answer 16. The answer to this question depends upon whether the gasoline is on the ground or in a tank or other container. If in a tank or other container, a solid stream would do no more than scatter the fire in all directions. If the gasoline is burning on the ground it can be dispersed in different directions by the use of a solid stream but cannot be readily extinguished by this means. The question should be answered "False."

Answer 17. Kerosene has a flash point in the neighborhood of 100 degrees Fahrenheit. As compared to lard oil, linseed oil, olive oil, paraffin oil, it would be considered a low flash point liquid. On the other hand, as compared with ether, gasoline, and alcohol it would be considered as having a high flash point. The flash point of ethyl ether ranges from below zero to zero F.; the flash point of gasoline ranges from —50 degrees to 0 degrees F.; the flash point of ethyl alcohol is around 50 degrees F.

On the other hand, the vegetable and other oils previously mentioned may have a flash point around 400 degrees F. Thus the matter is purely relative. We would consider that kerosene has a relatively low flash point. Therefore the statement would be "False."

Answer 18. True, when taking suction from a body of water below the level of the pumper.

Answer 19. True.

Answer 20. Why assume it is 80 per cent efficient? The efficiency may be far lower than this if the pump is in a bad state of repair. Early types of rotary pumps, after the gear teeth have been badly worn by sand and grit, would have efficiencies well below 80 per cent.

Answer 21. True, for the same quantity of liquid contained in the extinguisher.

Answer 22. False.

Answer 23. True.

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Fire Levels Famous Old Colonial Home

Damage estimated at $100,000 destroyed the 219-year-old Colonial summer home owned by The Rev. Anson P. Stokes, Jr., rector of St. Bartholomew's Episcopal Church, New York City, on Mark Twain Lane, Redding, Conn., on Oct. 7. An oil burner explosion in the cellar was blamed for the fire. No one was at home at the time.

The 10-room house, constructed in 1734, was furnished throughout with valuable antiques. Part of the loss is covered by insurance, Fire Chief J. Birdsey, Sanford, of Redding, said.

The blaze was well underway when it was discovered by a neighbor, Earl Walker, who summoned firemen. Volunteers from Redding, Georgetown, West Redding and Redding Ridge departments responded on a call for aid but could do little to check the flames.

The house was nicknamed "The Lobster Pot" by the late Mark Twain, whose secretary once lived there. The author said the house reminded him of the traps he had seen off the coast of Maine in the days when he was a resident of Redding. TOM MAGNER

World Wide Fire News

By Roi B. Woolley

Frostbite Treatment Revised by Red Cross

The American Red Cross has changed its recommendations for the first-aid care of frostbite and the use of the tourniquet for the control of severe bleeding, according to the new supplement to the Red Cross first-aid text book.

For injuries caused by freezing of a part of the body, it is no longer suggested that the frozen part be allowed to thaw out gradually in cool water or in a cool room.

Now, the Red Cross says, the victim should be brought into a warm room as soon as possible and the frozen part should be warmed quickly in a tub of warm, although not hot, water or under blankets.

As for tourniquets, it is no longer suggested that first-aiders apply the tourniquet high on the arm or thigh and loosen it every fifteen minutes. The Red Cross now recommends that the tourniquet be placed close to the wound. Once applied, according to this authority, it should not be released until a physician arrives and directs its removal.

The Red Cross warned that the application of a tourniquet to a limb is a serious step and if it is left on too long, the limb may be lost. "Therefore," it said, "a tourniquet should be used only for severe life-threatening hemorrhage, which cannot be controlled by other means."

These major changes were adopted on the basis of recommendations of the Committee on Surgery, Division of Medical Sciences of the National Research Council, and are included in the new supplement, now being distributed to more than 87,000 Red Cross first-aid instructors.

* * *

Fire Chiefs' Fears Confirmed!

One of the highlights of the recent Toronto Conference of the International Association of Fire Chiefs was the symposium on the hazards attendant upon the transportation of hazardous chemicals and explosives.

Among the speakers who emphasized their concern over the hazards of such transportation was Fire Chief Eugene Fields, of Omaha, Neb. He pointed out that truckloads of ammunition were rolling over vital bridges and arterial routes into and through his city and expressed his grave fears over the hazards such transportation caused to life and property in his city.

Chief Fields had hardly more than returned home from the Conference than his fears were justified by an explosion following the collision of an ammunition truck and a private automobile in which four persons were killed.

The truck, carrying about 500 rounds of 105-mm shells from the Nebraska ordnance plant to Omaha, crashed into the rear of a car containing four women. Both vehicles went off the road into a ditch and took fire. Shells exploded from the flaming wreckage for more than four hours after the crash, which occurred late the night of Oct. 9th.

One of the exploding shells landed in a cottage at nearby Boys Town, home for underprivileged youngsters, but

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HALE Portable Pumping Units

	U. S. Gallons Per Minute	*Disch. Press. Lbs. Per Sq. In.*
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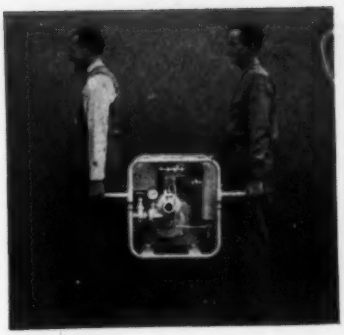
FZ	50 300	60 10
HPZZ	15 50	200 100



These 3 pumping "Workhorses" provide amazing volumes and pressures for efficiently fighting a great variety of fires. All three units are conveniently portable by two men; can be easily mounted or carried on any type of apparatus for fighting fires while in motion from booster tank; often used to pump from inaccessible water source into major pumper, or to fight fires direct.

(Fire Pumps in All Standard Capacities)

Write today for Circulars on Models FZZ, FZ and HPZZ—at least one of which is sure to meet your portable fire-fighting requirements. Ask for demonstration; no obligation.

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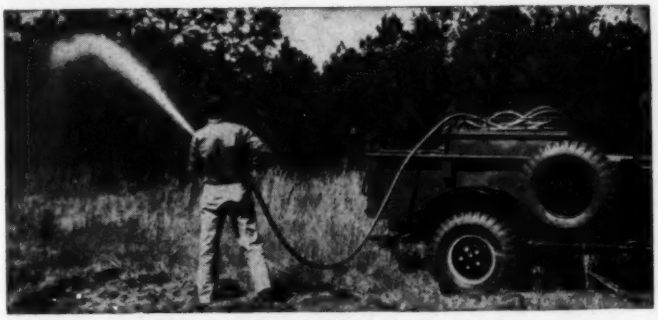

For Fighting Brush Fires from moving truck (as shown above); for pumping into Major Pumper from inaccessible water source (as shown at right); for fighting fire direct with solid stream, fog or foam . . . these are just 3 of the reasons many fire chiefs consider a Hale Type FZZ portable fire pumping unit indispensable. Capacity: 60 USGPM at 90 lbs.

Chief Lester R. Mullins of Williamstown, Ky., writes:

"To date we have used our pump on four fires with remarkable success. At present we are answering rural calls within a reasonable distance of Williamstown and have drafted water from cisterns and ponds. The Hale FZZ Pump will throw more water than any pump I have seen comparable in size.

"I recommend this pump to any department that is doing rural work and we have been able to use it on one occasion in the City, by drafting from a cistern, and I might say that it saved the day.

"I feel that any department is not complete unless they have a portable pump to use in any emergency."

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caused only minor damage. Another crashed through a plate glass window of the Ten-Mile-Inn, a restaurant on the hill above the highway, and emerged through a rear wall. The owner of the Inn suffered a fatal heart attack after the first blasts.

Three of the sisters were killed by the collision and explosion; the fourth member of the family was hospitalized with cuts and burns. The 29-year-old truck driver said a car just ahead of him in the inside lane slowed down suddenly, forcing him to swerve into the outside lane, where he struck the slow-moving car of the four sisters. He was not seriously injured. Firemen and police placed a cordon around the area and ultimately extinguished the fire in the wreckage. Meanwhile, Omaha fire fighters are thanking their luck stars that the bust-up occurred where it did instead of within the high value city area.

* * *

Hot Off the News Ticker

In Glasgow, Scotland, more than 200 workers slid down rope ladders into rescue tugs when a dockside blaze set gangways ablaze and threatened to trap them in a newly-built tanker. . . . Lightning struck a fireworks factory in the village of Cottone, Italy, Aug. 21, touching off a blast that killed four workmen and injured two. The factory was blown to bits and fireworks exploded for nearly an hour, beating back attempts to reach the trapped workmen. . . . The German steamer Anneliese Gleue reported she had been shaken by two heavy explosions astern, about 50 miles off the Hook, Netherlands. A radio message giving her position stated that after the explosions two "burning spots" with flames about two feet high appeared on the water. . . . Firemen turned high pressure hoses on an angry mob of Yugoslavs demonstrating outside the U. S. Embassy in Belgrade, Oct. 10th. . . . A fire destroyed a large hangar, a T-6 single-engine trainer and hangar equipment early Oct. 7 at Stewart Air Base, near Newburgh, N. Y., causing damage estimated at $500,000. A twin-engined transport plane was damaged but airmen and fire fighters moved it to safety along with three C-45's and two T-6's. Cause of blaze not given. . . . More than 200 sacks of parcel post were damaged or destroyed by fire Oct. 10th on a New York Central system mail train west of Toledo. Volunteer firemen of Swanton, O., 20 miles west of Toledo, used 3,000 gallons of water on one car loaded with 840 sacks of mail. It took four hours to extinguish the blaze. . . . Two Air Force pilots from Wright-Patterson Air Force Base, Dayton, escaped injury Aug. 21 last when their B-25 crashed and burned on a farm. Mrs. Genevieve Zimmerman ran to the wreck, slid back the Plexiglas cover of the cowl and pulled one man from the burning plane. Moments later her daughter and three men broke the cowl, which was jammed, and pulled the second man from the wreck. Who says prompt action can't save victims of air crashes? . . . The two-century-old house once owned by Mark Twain near Redding Ct. was destroyed by fire Oct. 7 with $100,000 damage. The 12-room landmark, named "Lobster Pot," used by the Rector of St. Bartholomew's Protestant Episcopal Church, New York, as a summer home, contained many priceless antiques and family heir-

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Damage from water and smoke is cut down when SHUREDRY Green-Bak Salvage Covers are on the job. Only the finest quality, treated cotton duck, which is pressure impregnated by the exclusive Fulton dry-treatment, is used in SHUREDRY Covers. All seams are waterproof, and SHUREDRY Covers are light — pliable and easy-to-handle. For top dependability — specify SHUREDRY when ordering salvage covers from your Fire Equipment Dealers.

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looms. . . . In Cincinnati, the Cincinnati Milling Company is reported building two underground atomic bomb shelters at its local plant. This is said to be the first effort of its kind in the nation to start work under a new Federal plan designed to get atomic bomb protection for key industries. . . . In Quebec, Pvt. Robert LaLancette, 22, who told a court-martial trial that he set a series of fires in Army barracks to get a discharge, was sentenced Oct. 9th to two years in the penitentiary. . . . Six Tunisians were killed Oct. 9th and two others injured, when a scrap metal warehouse containing apparently contraband explosives blew up. Police said they believed 600 hand grenades, 110 pounds of gunpowder and other explosives were hidden in the building, in Tunis. . . . A certain major in Pinner, England, gathered up the leaves in front of his home and flung them into a bonfire Oct. 4th. He woke up in a hospital with head and arm wounds. A German anti-personal bomb, apparently dropped during the war, was among the rubbish and went "boom.". . . Three persons were killed when a small chartered plane crashed into Granite Mountain near Putnam Valley, N. Y. Rescuers and fire fighters had to struggle through a brush fire kindled by the burning wreckage to get the victims. . . . Two men were killed in August when their light plane struck a guy wire of a huge television tower and crashed and burned on Blue Mountain near Pine Grove, Penn. The tower, more than 1,000 ft. tall, was completed last fall, by Station WHUM-TV in near-by Reading. Plane hit the concrete base when visibility was poor. . . . The noted Copacabana Palace Hotel on the Beach at Rio de Janeiro was damaged by fire that began in the theatre section at the rear of the building. No casualties.

Firemen Threaten to Quit Over Station Dispute

The resignation of the entire 24-man Cooksville Volunteer Fire Brigade faces Toronto Township Council following the letting of a contract for a new $14.300 fire hall in the Town of Cooksville, Ontario.

Volunteers say the council has "sold them short" by failing to provide a place for the firemen's meetings and recreation.

Fire Chief Jack Braithwaite, who appeared before council on Sept. 16th when bids were discussed, left the meeting with the understanding the fire hall was to be built with additional quarters.

Firemen, who had dressed in their uniforms for a protest march, dispersed; then the contract was let for the construction of three truck bays and no firemen's quarters.

Firemen asserted that if the council did not change the contract they will resign in a body, leaving the area without fire protection except for one man, who became the first permanent fireman of the township this year.

Councillor Ian Harte, fire committee chairman, said originally it was intended to spend only $10,000 in remodelling a former Toronto Township Hydro Office, which was located on Dundas St. W. just east of the village's main intersection, and this would have left room in the old building for firemen's quarters.

JOHN KARL LEE

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. . . . As manufacturers of fire fighting equipment, we are naturally fire conscious. So it is with sincere appreciation that we have accepted this plaque, presented to us by the West Virginia Fire Chiefs Association in cooperation with the State Fire Marshal's Office, for the best 1953 Fire Prevention Program in the West Virginia Class I industry group.

It has been a longstanding pronouncement of Powhatan's management that—"You can't sell fire protection unless you believe in it and practice it." Powhatan has its own completely equipped fire truck, inside fire protection and a trained fire fighting crew ready to meet any emergency.

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A Gift Suggestion

If you have in mind a little Christmas remembrance for some of your friends in the fire service, why not make it a year's subscription to FIRE ENGINEERING?

There is hardly a gift that would be appreciated more—and it carries its friendly greeting the year 'round.

Just send us the names and addresses (we'll check and let you know promptly if any are already on our list) and then just before Christmas a copy of the December issue will be sent to each along with a letter stating that a year's subscription is being entered with your compliments and the season's best wishes. We'll bill you at $3.50 each. That's simple enough, isn't it?

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For Practical Discussion of Current Fire Department and Fire Management Problems

RECORDING TELEPHONE AND RADIO CONVERSATIONS

FOR the Round Table discussion in this month's issue of FIRE ENGINEERING, two questions were presented. One asked if recording equipment was at present in service in the fire department, and the other related to the benefits which might be expected from the practice of recording communications.

Answers to the first question, surprisingly enough, are equally divided between those who have, and those who do not. Among all of those who do not now operate recorders, there was not one respondent but admitted that he wanted recorders and believed they would benefit his department.

It will be noted that not all of the users of recorders record telephone as well as radio communications, or vice versa. There may be good reason for this. But summing up, we predict this nation's fire service is going to adopt the recorder, and for most of the reasons given in this and subsequent round tables.

Not only can alarms of fire and dispatching of apparatus be recorded to save time in correcting errors, for preserving evidence, catching telephone false alarm senders, etc., but voice communications of nearly every kind between fire stations and headquarters and the department likewise can be recorded.

There will be less wrong runs, less arguments, less carelessness, better morale and more efficient operation among fire alarm personnel.

Recorders reduce doubt of fire department reliability and efficiency on the part of the public. And in time, their use will help to make the latter more painstaking and thorough in giving alarms.

They will help solve the problem of foreign born citizens who speak with dialects.

They will help reduce the growing number of false alarms by telephone, by making it easier to catch and convict culprits.

They serve as unimpeachable radio and other communications logs.

They are a great help in training programs.

They will make more efficient the work of toll and other telephone operators in their handling of fire service communications.

They will tend to make fire department personnel also more careful of their own communications.

They will do away with the present method employed in some cities of requiring from one to three extra personnel to listen in on voice fire alarms, saving time, money and annoyance.

They will reduce the number of claims against the city for incorrect or tardy response by authenticating the facts.

They will further enhance the value of fire department radio.

They will help protect the PBX operators and raise their morale.

They will help to cut down on superfluous conversation and improve the quality of communications messages.

Readers are invited to participate in this Round Table which will be continued in the December issue.

Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

A. McC. Marsh, Chief, Columbia, S. C.: We have had recorders in our Fire Department for three years. Since we have had them, we have had very little trouble. They have done a remarkable job for our department.

We have these recorders hooked to the telephone that receives the fire calls. They are also hooked to our vocal system which receives messages from one fire station to another. We also have a recorder on our radio which receives calls from the apparatus. We find that this recorder makes a wonderful record, especially for the operators who handle the calls. It makes them more considerate and careful in receiving the messages.

I don't see how any fire department could get along without radio and a recorder. The recorder will keep down any arguments that may arise. We have an Audograph machine in our department on which we can put the recording and play it back. If there is any confusion about the message, we can tell where the fault lies.

Our apparatus is dispatched to fires by radio. The traffic lights are controlled at the Headquarters Station. When the siren goes off, there is a blinker amber light. Our trucks go through the intersection on this light.

The captain on the apparatus radios to the operator to give him the light and the siren at the intersection he is going through just before he reaches it. The operator then throws the switch which gives him a clear intersection. We have never had a wreck with this system.

The vocal and traffic lights systems have speeded up our department remarkably and have made it much safer for apparatus going through intersections.

F. J. Wells, Chief, Fargo, N. D.: We have recorders for recording all alarms received over our fire and emergency lines. On two occasions through the use of recorders, we were able to prove we had been given the wrong addresses when the alarms were telephoned in to alarm headquarters. On both occasions, individuals calling the fire department were very apologetic after they heard their own voices giving the wrong addresses. Up to the time they listened to the recorder, they were very emphatic in their statements that the fire department was at fault. The recorder is the only thing I know of that will give an alarm operator half a chance to receive an alarm when an individual calls up in a very excited state of mind, giving the alarm in a very fast manner and then hangs up the receiver before the alarm operator has a chance to even grasp the first few parts of the address. Just how many times we have been able to play back the recorder and obtain the address, I do not know, but I do know it has been a Godsend on a couple of occasions.

The recording of false alarms can be made and a comparison between the different alarms made so that you may try to determine if it is the same party calling.

We did determine that a series of false calls did come from one and the same little girl. However, the party calling was not apprehended through the use of the recorder.

After four years of using a recorder in our fire alarm office, we are all of the opinion that it is a very useful and necessary piece of alarm office equipment.

W. H. Kammann, Chief, St. Louis, Mo.: At present we are placing an order for a vocal recorder which will be used for recording transmissions on our new radio system. FCC regula-

HERE ARE THE QUESTIONS

1. **Is your fire alarm headquarters equipped with recorder for recording telephone and/or radio conversations?**
2. **In what ways do you feel that recording would prove beneficial to the fire department in connection with telephoned alarms; telephoned reports of fire hazards; apprehending the senders of telephoned false alarms; radio conversations between dispatchers and apparatus, etc.?**

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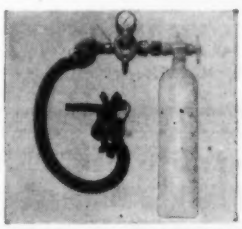
"These efficient, portable oxygen units are wonderful for emergency service. Victims get 100% concentration — comfortably — thanks to the demand feature. We can also provide constant flow by pressing a button. The demand feature is fully automatic and cuts down training time."

SCOTT Air-Paks (illustrated on fireman at top left) enable rescue crews to reach victims under the most hazardous breathing conditions. Air-Paks assure the wearer constant supplies of cool, fresh AIR (not oxygen) for quick rescues with maximum safety. Do as hundreds of other fire departments have done . . . specify SCOTT.



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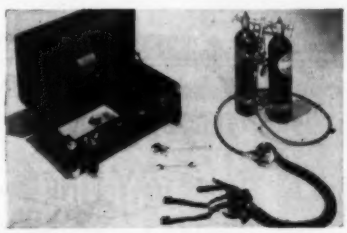

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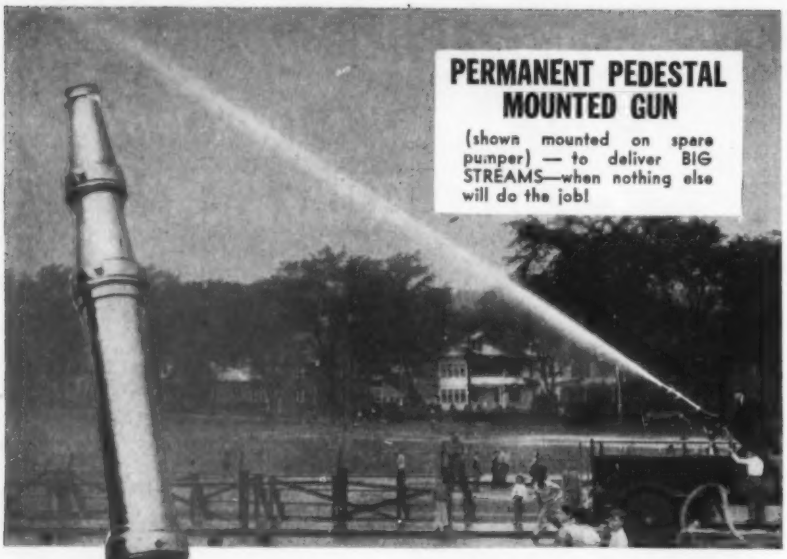

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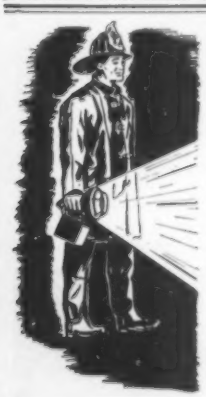

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tions require a record be made and filed on all transmissions. Therefore, much time and labor can be saved by the use of a vocal recorder.

Vocal recorders are being used in many of the nation's fire alarm systems, such as Washington, D. C.; Boston, Mass., and Detroit, Mich. These recorders have become an essential part of their fire alarm equipment and have been used to a great advantage in the recording of alarms and emergency calls over the Bell Telephone circuits; also it has been found that this equipment has been used to great advantage in checking errors made in reporting the location of fires and had been found invaluable in identifying the voice of those involved in sending false alarms.

R. C. Malmquist, Chief, Minneapolis, Minn.: The Minneapolis Fire Department has had voice-operated recorders in use since 1947, and all radio messages, base and mobile, are recorded and kept on file for two years. We have found that the recordings have several advantages such as not only are they used as a radio log, but on many occasions, are played back to verify time of arrival at fires and emergencies, and to clear up misunderstandings on the part of the public as to the location and information that was given to the apparatus and officers at the scene or en route to a fire, that was available at the time. The recorders also aid in enforcing discipline on the air and provide us with a means for study to improve our radio communication practices and messages.

This department has recently acquired a recorder for all incoming telephone calls. We feel that it will be of value especially when a person calls in and gives a garbled or partial message and then hangs up, so that we may get sufficient information in the play-back that will enable us to send apparatus or help. We feel also that if the public knows we are recording all alarms, it will deter false alarms via telephone somewhat and will also give us a voice recording of the false alarm that will be of much value in the possible apprehension of the party calling in the false alarm. We also feel that the public will be more considerate, especially so in the case of crank calls when they know that a recording of their conversation is being made. The fire department operators will be on their toes, too, due to the recorder.

C. M. Johnson, Chief, Knoxville, Tenn.: Knoxville's Alarm Headquarters is not equipped with a recording system for telephone conversations or radio. A recording system would definitely be an improvement.

Many times the senders of alarms do not give sufficient information and blame the fire alarm operators with having made the mistake.

Another good reason is that a recording system would clear up complaints where the fire department is criticized for being too long in reaching the scene. A recording system would record the time the alarm was received and the apparatus leaving the fire station. If there was no delay in getting out of the stations, then it would have to be due to traffic congestion if any delay were encountered. Knoxville's Department answers calls

to a distance of five miles outside the corporate limits provided the property owner has the required arrangement with the city for this service. Many times the department is called to answer an alarm outside to property that does not have the arrangement, and to justify their claim for not paying the charge, many times they will say they did not call the department; that it was a neighbor who called. If a recording system were in operation the true facts concerning every alarm would be recorded. Then any mistakes made could be proven by the records.

E. P. Feaster, Chief, Lincoln, Neb.: Our fire alarm headquarters is not equipped with recorders for recording telephone or radio conversations. However, provisions are made at alarm headquarters for four different members to listen in on all alarms or conversations over telephone transmitting alarms; also in our case, the telephone company has one man assigned at switchboard to check all alarms and conversations on fire alarm line. No provisions are made for radio conversation recording as our radio communications are received at police department and relayed to us by radio or special telephone line.

Our history in the past shows that these recordings would not prove beneficial to our fire department. I can see in larger cities where alarms are more numerous and where they have additional complications that recorders would be very beneficial. The false alarm is not a serious problem in our department as the percentage is very small. The conversation between dispatcher and apparatus in our present setup would be impossible as our apparatus is not radio equipped.

C. W. Wyrick, Chief, Greensboro, N. C.: We are equipped with recorders for recording telephone conversations at the present time. The recorder is so assembled that we can also record radio conversations, but this is not done at the present time.

With regard to telephone alarms, the recorder protects the PBX operators. We know of one instance in Columbia, S. C., where a call was received, recorded and the trucks dispatched. The next day the person who called came into the chief's office in a huff about the slowness in which the trucks responded. Upon playing the conversation back, the individual was surprised to hear himself calling in and giving the address that he had just moved from instead of his new address.

Another way in which we find recording calls proves beneficial is in cutting down false alarms. A suspect will immediately admit, in most instances, that he called in a false alarm if allowed to listen to his voice on the tape.

Many times, if we record telephone reports of fire hazards, we will find it beneficial to us if there is ever a misunderstanding between the reporter and the fire department. It always helps to clarify this misunderstanding.

Allie A. Feldman, Chief, Denver, Colo.: We do not have recorders for telephone and radio conversations. We have been trying all this year to get an appropriation for them.

These would benefit the fire department by allowing play-back to verify

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locations of fires so as to eliminate or correct mistakes. It would also be possible to trace senders of false alarms. It will also afford some protection to the department and the dispatcher against some people who make accusations which we could not prove or disprove otherwise.

Walter S. Blanton, Chief, Savannah, Ga.: We do not have recording equipment in our department.

I believe, however, that such equipment would protect the switchboard operator in the event the person telephoning the alarm should give the wrong address, etc.

As to telephoned reports of fire hazards, such equipment would insure that all hazards are recorded for action until they are eliminated. It would record the voice of senders of false alarms by telephone and would also point out errors of radio dispatchers and receivers and would improve their efficiency.

* * *

The following replies are in answer to a previous Round Table on space heaters.

Lester Cheek, Kern County Fire Department, Bakersfield, Cal.: Having just spent seventeen months on the Island of Okinawa as a crew chief in the Army Fire Department, my colleagues and I had much to do with oil heaters for that was our source of heat for the entire island, dependents as well as the GI, the former seeming to have the most trouble with the appliances.

In February of 1952, we lost two GI's in a fire originating in their sleeping quarters which were ignited by an oil heater that apparently had been unattended. This can mean only one thing—never retire at night without turning them off.

In our many encounters with overheated oil heaters in the dependent housing area, we summarized the four following items:

1. If the carburetor was opened too much or beyond the number two on the dial before ignition, the heater would invariably overheat from excess fuel.

2. It also was found that the float in the carburetor will stick allowing excess fuel into the heater which in turn caused overheating.

3. Stoves ignited other than with rags were found to be a major factor in preventing the fuel from flowing, due to excess soot from papers, matches, etc., used as a means of ignition.

4. On two occasions the carburetor was found to have been partly melted along with the usual overheating.

All the heaters used on the Island were of reputable manufacture with the UL tags attached. All heaters had been installed and adjusted by trained Post Engineer personnel. My own experience with the heaters was one of constant cleaning and adjustment for proper usage.

As the women are most often home during the day, it is obvious that instructions are followed from what is passed on to them. More specific information should be given.

The installation and adjustment must definitely be done by trained personnel and the cities should have an ordinance covering every phase of installation which should be patterned after NBFU specifications.

Clarence C. Baal, Jr., Chief, Sherrill Fire Department, Durango, Ia.: We have had no fatalities due to oil burning stoves, but the very first alarm our department responded to after its organization was for what was supposed to be an exploding oil burning stove.

This type of heating stove is widely used both here in town and among our rural subscribers and although we have no town ordinance at present to cover use, installation and maintenance, we hope to have one in the near future. This, of course, will still give us no control over rural installations.

As I stated above, our first call was for an oil burner explosion, but after examining the stove, we reached the conclusion that the stove had only provided the ignition flame. The explosive vapor probably came from something the housewife had placed on top of the heater. She was painting at the time, and we presumed that she had placed some solvent with fumes heavier than air on top of the burner. Of course, she would not admit to this when questioned. The explosion seemed to have occurred between the inner and outer jacket of the heater blowing away a rear corner and completely demolishing an aluminum pan and tea kettle which were on top of the stove. The fire pot of the stove was undamaged and had been going since early morning.

Our second oil burner fire was actually a chimney fire. A new owner had installed an oil heater while the previous owner had burned wood. Too much oil was allowed to run into the

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burned before lighting and the resulting high heat ignited the accumulation of soot in the uncleaned chimney.

Our third call of this type was to a large frame apartment house here in town on a very windy day. A strong down draft blew out the burner flame and filled the apartment with soot. We cautioned the owner not to try to light the burner again until it had cooled.

The fourth and last call of this type came late last spring and caused the most damage even though the fire that resulted was out upon arrival of the department. The call was to a one-room rock rural school about three miles out of town. The previous evening the teacher had left the oil burning heater turned on. When she arrived the next morning she opened the entryway door and was met by a strong back-draft. Surprised, she opened the schoolroom door and saw fire under the heater.

She immediately thought of calling the department and rushed to a nearby farmhouse to do so, but before the truck arrived the farm owner had entered the school and extinguished the small fire with a wet gunny sack. The smoke and fumes were very heavy, but he managed to turn off the heater before leaving the room.

I was away from home at the time and the call was handled by our assistant chief. I examined the building when I returned home that evening, and when I talked to my assistant the next morning, I found that we had both reached the same conclusion as to the cause.

The building had two-foot thick stone walls. All windows were equipped with storm sash. There were two tight doors between the schoolroom proper and the outside air. Most of the oxygen in the room was exhausted by the burner flame. After this time there was still sufficient oxygen to support limited combustion which caused most of the oil to vaporize and spread into the room along with large quantites of soot. The opening of the door provided oxygen to ignite the heavy accumulation of oil around the base of the burner. The soot impregnated vapor settled, covering every surface in the room and ruining many valuable books.

Our conclusions were further affirmed when the teacher stated that during the day, the room became filled with fumes and the stove often went out. We can't understand why some of the pupils weren't overcome.

All types of heating units must be used properly to be safe, and in my opinion, the oil burning heater is as safe as any other type of heating stove when used properly. There is also less likelihood of chimney fires from this type of heater.

It goes without saying that all heaters of this type should carry the UL label. Local ordinances should regulate the installation, use and maintenance of this and other types of heating units. Owners should be educated in the use of the oil burning heaters through pamphlets distributed by the fire department. Periodic inspections would make certain that the local ordinance is being complied with. There, of course, still remains the heater in rural homes were fire departments have no jurisdiction.

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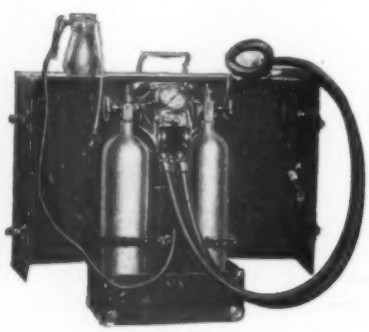

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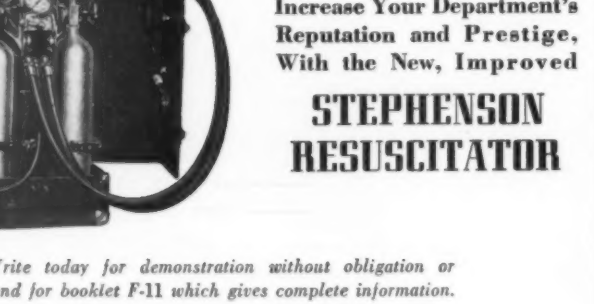

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Obituaries

Chief E. P. Walsh Dead

Edward Patrick Walsh, 57, a member of San Francisco's Fire Department for 31 years, died October 9, just a few short months after he had retired as Chief of the department in which he grew up.

Chief Edward P. Walsh

Poor health forced Chief Walsh to retire, reluctantly. He was succeeded by Chief Frank Kelly, present head of the San Francisco department.

Chief Walsh's death followed by four days the death of his brother, Lieutenant William E. Walsh of Engine Company 27.

Walsh entered the department as an ordinary fireman on January 1, 1922. Five years later he was appointed lieutenant. He became a captain in 1936, battalion chief in 1937, assistant chief in 1943 and, in 1948, the Fire Commission chose him to succeed Fire Chief Albert J. Sullivan.

As Chief, Walsh was loved by his men. He considered the ideal chief to be the individual who could not only handle the administrative work but also be available for fighting fires. He twice fought for pay raises for the 1,697 men under him and was instrumental in voter authorization of a $4,750,000 bond issue last year for replacement of the city's antiquated fire houses.

Born in San Francisco Oct. 31, 1895, he is survived by his wife, Julia; three sons, Edmond J., Robert F., Walter M. and a daughter, Mary Jeanne Walsh.

KENNETH R. MACDONALD.

Chief John Gibson Dead

John Gibson, who retired some years ago as head of the Mount Vernon, N. Y., Fire Department, died in Madeira Beach, Fla. on October 2nd 1953. He was 69 years old and had lived in Florida most of the time since his retirement in March, 1948.

Chief Gibson joined the Mount Vernon Fire Department as a member of old Chemical 4, now Engine 6, on March 21, 1905. He continued as an active fireman until 1923, when he became the department's first full-time paid chief.

Chief Gibson continued to hold the office of chief for 25 years, during which

time he became widely known as an outstanding fire officer.

The Chief was one of the organizers of the Westchester County Fire Chiefs' Emergency Plan in 1928, and later became its president. He also headed the New York State Association of Fire Chiefs and was prominent on numerous committees of the International Association of Fire Chiefs, and other fire service organizations.

Persons in the News

LeStrange Heads Berkeley Firemen

Howard LeStrange, a member of the Berkeley, Calif., Fire Department for 40 years, was appointed its chief on September 30, 1953, succeeding retired chief Wm. A. Meinheit.

The 60-year-old fire fighter joined the department in 1914, and subsequently was named lieutenant in 1920, captain in 1926, chief of the fire prevention bureau in 1940, assistant chief the following year, and deputy chief in 1947. A member of a pioneering Berkeley family, Chief LaStrange has fought every major fire in the city.

Chief LeStrange's brother, Bert, was a member of the department and was killed in 1946 while operating at a fire in the University of California on New Year's Eve.

Chief Cullinan to Retire

John J. Cullinan, Chief of the Morristown, N. J., Fire Department for nearly 30 years and the department's first fulltime chief plans to retire Nov. 16th.

Chief Cullinan joined the department 43 years ago and served in every office of Washington Engine Company. He was elected second assistant chief in 1922 and first assistant in 1923, becoming chief only a year later. He was reappointed each year.

On Jan. 1, 1929, he was appointed the first paid chief of the department, becoming a permanent appointee when the firemen came under Civil Service rules in 1930.

The chief was graduated from the New York Fire Department Fire College. He is a veteran of World War I, a member of the International Association of Fire Chiefs, N. J. Fire Chiefs' Association; the Paid Chief's Club of N. J.; the Morristown Exempt Firemen's Association and the N. J. Exempts Assooiation.

He will leave an efficient, modernized fire department, with 14 paid men but will take with him the esteem and admiration of his fellow citizens and firemen.

Capt. Claude Conlin, Jr., Gets Fire Safety Award

Capt. Claude A. Conlin, Jr., of the Los Angeles, Calif. Fire Department was awarded the Edwards National Safety Award as the fireman who has contributed the most toward fire safety.

Capt. Conlin is best known nationally for numerous training and public education films on fire protection, many of which are now being used in 30 states,

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the Navy and five foreign countries. He also was instrumental in starting the Junior Fire Department in Los Angeles City Schools.

PAUL C. DITZEL

L. A. County F. D. Promotes Five

Chief Keith Klinger, who was named head of the Los Angeles County Fire Department after Chief Cecil Gehr was killed, has moved up five officers.

John W. Duncan, former deputy chief, was named first assistant chief. Other promotions include Assistant Chief Roland W. Percey to first assistant chief and Assistant Chief Harvey Anderson from special services to command mountain areas.

Battalion Chief Harvey W. Crutchfield was appointed temporary assistant chief and assigned to special services and Captain Sam D. Tanksley was appointed battalion chief. The L.A. County Fire Department is one of the West Coast's largest.

PAUL C. DITZEL

Phoenix Tests Microwave for Fire Alarm System

Ultra high frequency microwaves may replace the cable system which now connects fire stations to form the Phoenix, Ariz., fire alarm system.

This departure in the method of establishing continuous contact between fire stations has been suggested by Rae Echols, fire alarm supervisor of the Phoenix Fire Department. Echols made extensive preliminary study and investigation of the possible uses of microwave before proposing the new system. On September 15, 1953, Radio Corporation of America entered into an agreement with the City of Phoenix to conduct the necessary developmental tests and prepare plans and specifications for the installation of a practical microwave fire alarm system.

RCA engineers expect to complete the developmental tests by the end of the year and the plans and specifications by March 1, 1954.

In addition to the lower installation cost of the microwave system, considerable saving can be expected in the cost of maintenance. In a microwave system there are fewer and shorter lines to maintain, fewer cables to splice, and practically all equipment is housed inside and protected from the weather. The equipment is easily accessible.

Engineers who have studied Echols' proposed system say that it is fool-proof and completely dependable. Unless the RCA tests reveal presently undiscovered weaknesses, there is no reason, the engineers say, why the microwave system should not be accepted.

The microwave system would be used to link the 10 fire stations in the City of Phoenix in a continuous loop. Fire alarm boxes, however, would still be operated through wires, but the system of connecting the boxes to the stations would be changed. Whereas now all fire alarm boxes are connected by overhead wire or underground cable directly with headquarters station, under the microwave system the boxes would be connected by wire to the nearest fire station. The box wires would terminate in the microwave transmitter in the nearest station and would send fire alarms automatically over the microwave to headquarters. Then, using another microwave channel, the headquarters alarm operator would dispatch one or more fire companies to answer the call. All of this could be done in a matter of seconds from the time the call came in from the fire alarm boxes.

Connecting fire alarm boxes to the nearest station would result in much shorter wires and reduced cost, regardless of the extent to which the City expanded, since new fire stations must be constructed as more area is annexed.

From an engineering standpoint, fire alarm boxes also could be connected to fire stations by microwave, but such a system would not be sound economically. It would be too expensive to maintain a microwave transmitter for each fire alarm box, especially since a box may be used but once or twice a year. The equipment in the conventional fire alarm box connected by wires is inexpensive. Basically it is a simple automatic telegraph system.

Since the microwave beam can be multiplexed and used the same as a highway engineer uses multi-lane highways, the communication engineer can use the beam to perform many functions. One beam can carry dozens of telephone conversations, and many telegraph, teletype, telemetering and supervisory control circuits.

This flexibility suggested to Echols a wide range of uses of the microwave beam in municipal fire departments. Connecting the alarm system to all stations would be only one of its functions. This would require only one lane of the beam. Other lanes would be available for loud speakers in each station, for an

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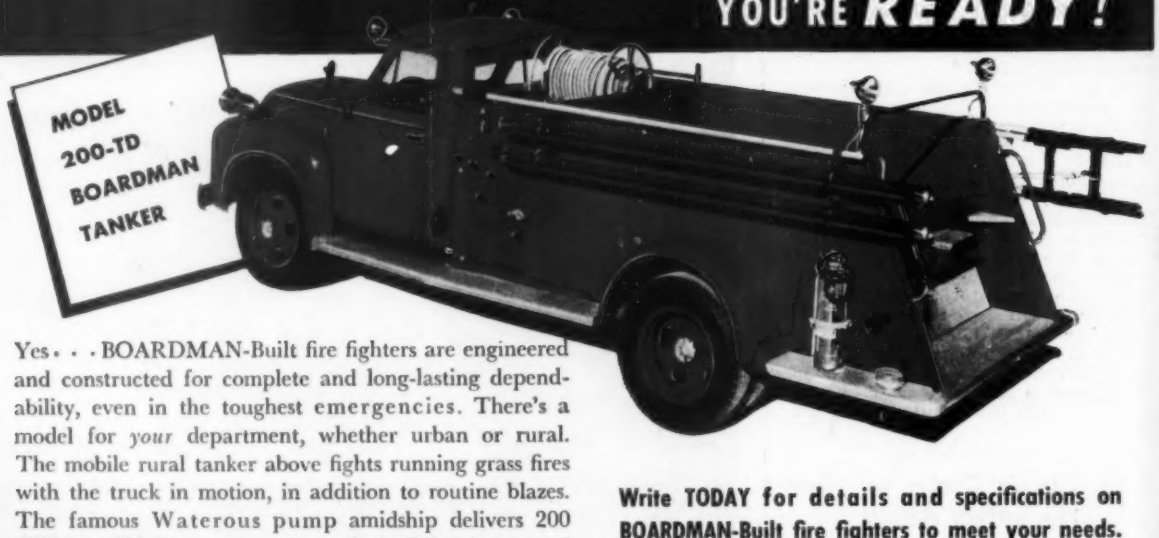

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automatic inter-station dial telephone system to handle routine department business, a teletype circuit to carry department bulletins and other messages, an automatic display panel to show continuously the location, operation and condition of each piece of fire fighting equipment in the city, a telemetering system which would enable the alarm operator at headquarters to read instantly the voltage, current and leakage of all box circuits, and a fault location panel which would act as a watchdog over the entire microwave system itself.

The fault location panel would show the alarm operator what had gone wrong, where the system had failed and what had sprung into service to carry on all operations uninterrupted.

Every part of the microwave system will be designed so that the failure of any part of the system will in no way affect the system as a whole. If one fire station were destroyed by bombs, for example, the balance of the system would continue to operate as a complete unit. Battery operated inverters and automatic standby generators would furnish two emergency sources of power at all stations.

News of the Manufacturers

Ansul Appoints C. Victor Mars

C. Victor Mars has been named vice president in charge of research and development for Ansul Chemical Co., Marinette, Wisc. Mars' 22-year career

C. Victor Mars

with Ansul includes service as a research chemist, refrigeration and industrial chemicals salesman, manager of product development and director of research and development.

New Quick Change Proportioner

A new combination proportioner designed to introduce in proper proportion either mechanical foam liquid or a wetting agent has been developed by the National Foam System, Inc., West Chester, Pennsylvania.

This new proportioner permits the easy conversion of any engine from just water to "wet water" or foam, thus allowing three-way fire fighting protection. With the turn of a valve either a blanket of foam may be generated to snuff out flammable liquid fires, or "wet water" may be supplied where quick, deep penetration is required. At the same time just water may be supplied for ordinary fire fighting requirements.

The National Combination Proportioner is easily portable, but can also be permanently mounted on a fire truck.

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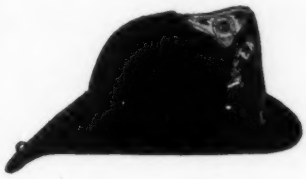

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CAIRNS & BRO., Inc. - Allwood, Clifton, N. J.

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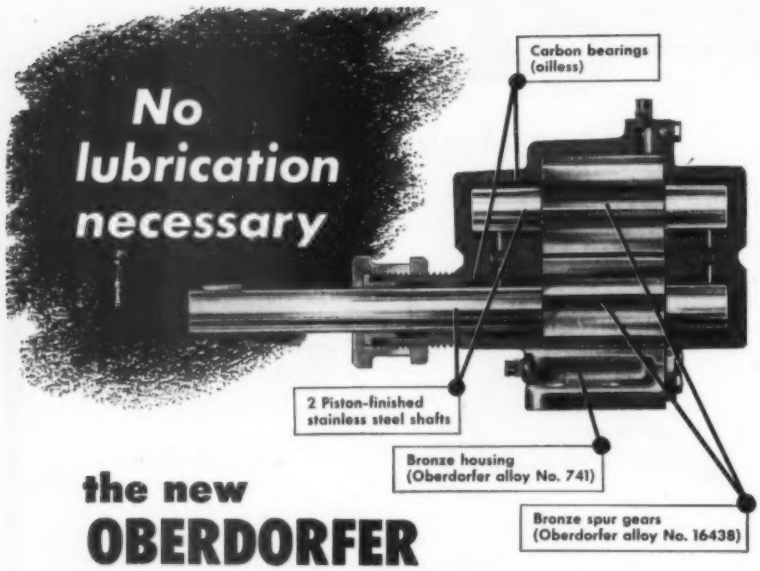
No lubrication necessary
Carbon bearings (oilless)
2 Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)
Bronze spur gears (Oberdorfer alloy No. 16438)

the new

OBERDORFER BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $200.00 No. 13 — $90.00

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

WATER when and where you want it!

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Pick-up can be accomplished by flexible hose direct to the portable liquid containers, or permanent piping can be connected to the existing tanks on the engine. Inlet and discharge outlets are for 1½" hose.

At 125 psi. or higher inlet pressure, the National Combination Proportioner will operate with a foam nozzle which produces 400 to 600 gallons of mechanical foam per minute, or with any equivalent capacity fog nozzle when a wetting agent is required. It is a line proportioner. Proportioning of either liquid automatically ceases when the operating nozzle is shut off.

New Fire Rescue Suit

A new fire rescue suit, field tested at temperatures up to 1800° F., has been announced by Industrial Safety Specialties, Co., Inc., Perkasie, Pennsylvania.

Known as the ISSCO Fire Rescue Suit, it has been tested on fire training grounds, in laboratories and industrial plants, at commercial and military airports and has demonstrated effectiveness against pit fires, spill fires, shipboard and aircraft fires.

The suit weighs 28 lbs. (rescue blanket—6 lbs. additional).

Basic construction of the ISSCO Rescue Suit is an outer layer of 90% asbestos cloth, plus one inch of fibre glass insulation covered with aluminum foil, plus an inner lining of vinyl-treated glass cloth which acts as a steam barrier.

Trousers are one-piece and cover feet, legs, and lower abdomen up to a point 8" below the arm pits. Legs are wool-lined for additional protection, and "shoe" sections are double thickness throughout. The hooded blouse is designed to be roomy but not bulky and extends well below the waistline. Hood sections contains a large, laminated safety glass window, permitting a wide field of vision. In addition, the hood leaves ample room for the wearing of self-generating breathing apparatus.

New Emergency Power Bulletin

A new 4-page, 2-color catalog-in-brief describes and pictures Homelite portable generators designed to supply emergency electric power when storms, fires, floods or accidents disrupt normal power supply. The new literature explains the various functions and uses of these compact, lightweight, gasoline-engine-driven generators for industry, homes, farms, hospitals, institutions, etc. The Homelite booklet (L-411) also includes a section on specifications, electric output, and prices of five of its most popular models. A copy may be secured from Homelite Corporation, 865 Riverdale Avenue, Port Chester, New York.

Grinnell Installs Pyrene Air Foam Systems

Air foam extinguishing systems designed and manufactured by the Pyrene Manufacturing Company, Newark, N. J., are now offered for sale and installation through the nationwide organization of the Grinnell Company, Inc., Providence, R. I.

The non-exclusive arrangement with Grinnell does not alter the sale of Pyrene air foam systems, mobile and portable equipment through Pyrene's own district offices and air foam jobbers. It does, however, bring the world's largest organization for the installation of sprinkler systems as well as all types of piping work together with the makers of an established line of air foam equipment.

Captain Leonard Schorr Joins "Approved"

Captain Leonard Schorr, who retired from the Garden City, N. Y., Fire Department in 1952, after serving as fireman and officer in that organization from 1922, has joined Approved Fire Equipment Co., Rockville Center, N. Y., where he will be a member of the engineering staff and will handle testing of apparatus built by Approved.

Captain Schorr is widely known among fire fighters in the Long Island and New York areas for his outstanding work with the Garden City department. He was appointed a lieutenant of that organization in 1931, and captain in 1935. He became a member of the paid force in 1927.

On Dec. 13, 1953, Captain Schorr was tendered a testimonial dinner by the Garden City Fire Department at which time he was the recipient of numerous gifts from admiring members of the department and friends.

Personnel Changes, the Gamewell Company

The Gamewell Company, Newton Upper Falls, Massachusetts, manufacturers of fire alarm systems, police signal systems and precision electro-mechanical equipment, has appointed Robert Lassell to be District Manager of their Dallas, Texas, office.

Robert Lassell

Mr. Lassell has been with Gamewell since 1937 and will have full responsibility for the direction of the company's operations in the Southwest. He has a well-rounded engineering background, having been associated with the Testing, Drafting and Laboratory departments of Gamewell and has had extensive field work with their Engineering Department.

Mr. Lassell graduated from Fitch-

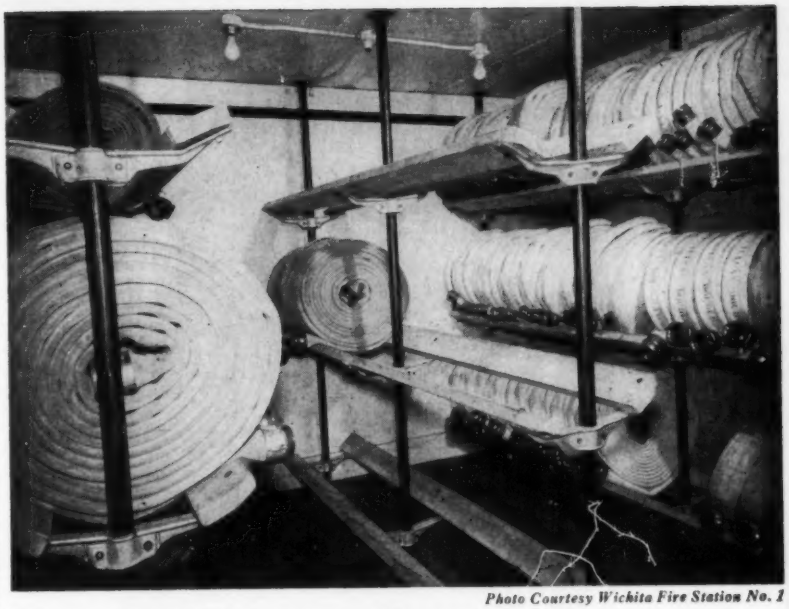

Photo Courtesy Wichita Fire Station No. 1

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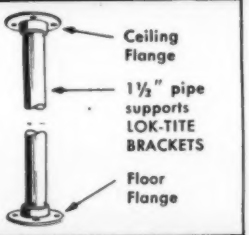

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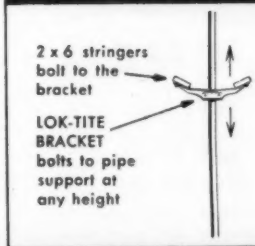

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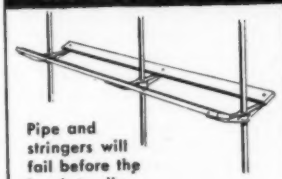

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MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

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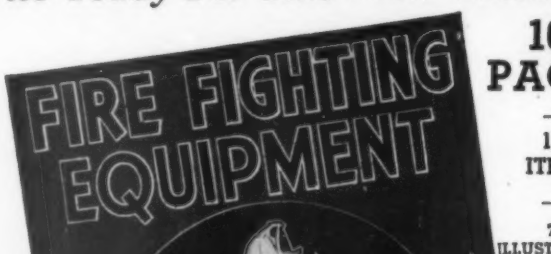

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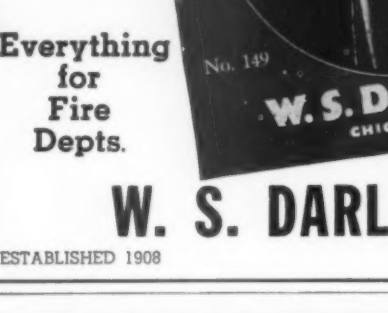

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The Onan CW, with all its exclusive advantages, *costs less than any other complete electric plant of its capacity.*

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Onan ELECTRIC PLANTS

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burg, Mass., High School, Eastern Radio Institute, Wiggins Airways School, and is the holder of the Commercial Pilot's License. He is a veteran of World War II, having served in the U. S. Navy.

Waldo L. Waters

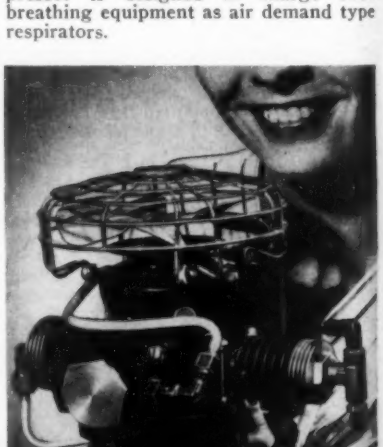
The company has also announced the appointment of Waldo L. Waters to the position of Sales-Engineer in their Chicago, Illinois, office.

Mr. Waters will devote his energies to the promotion of the company's products in Ohio, Kentucky and Tennessee.

He was educated at the Farm and Trades School, Boston, Mass., and has studied various engineering courses at Boston Trade School, Northeastern University and M.I.T. From 1937 to 1951 he was with the Boston Edison Company's Engineering Dept., and since then has done electrical engineering for the Dow Chemical Co. and Stone and Webster Engineering Corp.

Pump for Charging Demand Type Respirators

Weighing only 6½ lbs. but having a rated discharge pressure of 2,500 psi, the Cornelius Model 32R1500 air compressor is designed to charge such breathing equipment as air demand type respirators.



Lightweight air compressor for charging cylinders on air demand type respirators.

The 3-stage compressor is engineered for V-belt drive with any power source of ½ H.P. or greater. It will compress 70 cu. ft. of free air to 2,350 psi in 100 minutes at 5000 RPM, the manufacturer says, and has an ambient temperature

range of 0° to 160° F. Overall dimensions are 10½" x 13" x 7". A similar model with identical capacities, driven by an integral 110 volt ac motor, has also been announced by the firm, the Cornelius Co., 550 39th Ave., N.E., Minneapolis 21, Minn.

Ventilation

(*Continued from page* 1011)

High humidity and lack of wind will increase the task of top level ventilation by, causing smoke and gases from vents to blanket roof areas, reducing visibility and making breathing difficult. These conditions tend to increase accidents to operating personnel. The situation is always much worse after dark than during daylight hours.

4. Exposures—What and Where: No ventilation, vertical or lateral should be undertaken without consideration of, and a first hand knowledge of, exposure hazards. What buildings or other property are or may be jeopardized by the ventilation operation? What about the adjacent structures—occupancy, combustibility, height, construction of walls, cornices and parapets, windows and other openings? Are there fire escapes from which the involved building can be reached, or from which protective covering streams can be operated? Are there connections between buildings through which smoke and fire might travel?

5. Available Fire Department Equipment: Just as in any craft, the quality of the craftsman's work depends upon his skill and his having the tools for the job, so good ventilation calls for not only human skill, but having the facilities with which to apply it.

If ladder equipment is lacking, so roofs of fire-involved buildings cannot quickly be reached, the fire battle may be lost at the very outside.

If a department be short of essential masks and breathing apparatus, firemen whose duty it is to ventilate will be unable to make quick interior sizeup and survey.

Inability to procure such heavy duty equipment as pavement-breakers without delay may handicap a fire force in reaching a sub-surface fire.

These are just a few examples to illustrate the point. It is true that outside of smoke removers and ejectors and certain fans, there are no special apparatus or devices for ventilating. The day will come when mechanical smoke removal apparatus will be standard equipment in all metropolitan fire departments, at least.

For fast, effective ventilating, the department must be equipped with all forcible entry tools—preferably with power-operated saws, drills, cutters, punches and breakers. The first essential requisite, this author believes, is ample respiratory protective equipment. All ventilation cannot be effected from *outside* and only by making it possible for men to enter and work in smoke- and gas-filled areas can adequate inside ventilation be accomplished.

6. Training and Discipline of Personnel: Perhaps this essential to good ventilation should lead the list; certainly effective ventilation is impossible without trained, well disciplined personnel.

Training does not mean merely having the theoretical knowledge of the principles of ventilation, as related to chemistry and to the combustion of fire;

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WHEN LIFE IS IN DANGER—ONLY THE BEST IS GOOD ENOUGH

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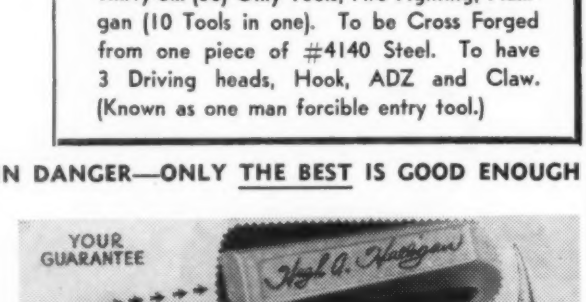
—it's a study of forcible entry and ventilation



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THE AIR CONDITIONING

FIRE HOSE DRYER

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. NO OTHER DRYING METHOD IS SO FAST—SO ECONOMICAL—SO EASY TO USE.

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If you are building, send for free copy of "Fire Station Design"

NEW HOSE DRYING MANUAL TELLS HOW TO DRY, STORE AND CONSERVE FIRE HOSE

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it means having first-hand practical experience in ventilating.

All firemen are taught the use of basic fire department tools, such as axe, claw and hook; how to tie knots, climb ladders, etc. How many of them have ever been instructed in the use of power blowers and fans for inside ventilation? Mere training in standard fire department operations, such as forcible entry, will not necessarily insure efficient ventilation operations.

Scientific ventilation calls for highly specialized knowledge. If anyone doubts this, let him try to solve the problem of how he would ventilate one of those multi-storied main street mercantile occupancies, which has added a false front, blocking up all widows, and has installed air-conditioning, recessed lighting, etc. Or let him figure out how he would rid a heavily charged sub-basement of toxic fumes without inviting a disastrous gas explosion.

True, the ability to open a door or window, or remove a skylight calls for knowledge of fire department tools, and how to use them, but training is required to make certain that the *right* doors, windows and skylights are opened at the *right time* to accomplish certain objectives in the over-all ventilation scheme. And how many officers consider ventilation as a complete entity in itself, but which is nevertheless a vital essential of the fire attack and extinguishment plan of each fire.

How many fire departments have taught this over-all picture of ventilation from the teamwork angle? Good ventilation is more than the effort of one man who knocks in a window, or cuts a hole in a roof. It calls for coordination and cooperation of effort, as we shall see later.

All this doesn't mean there must be special ventilator squads or personnel with each fire company. That would be ridiculous. But in any attack upon a fire there must be those who lead the way, who open up, who ventilate to get at the fire and make rescues and those who back them up with the hose lines, extinguishing the fire, and protecting exposures, etc.

Most fire departments require coordination between ladder and enginemen. In some there is such a distinction that the "water thrower" gets only cursory training in ladder operations. In others, particularly where crews are short, each man may have to perform any one of several operations. The tendency appears to be to so train today's firefighter that he can and will do a creditable job in ladder, engine, rescue or whatever firemanship task he may be detailed to perform.

The idea that ventilation is exclusively the task of the ladderman or ladder company is no longer generally accepted. The principles and practices of ventilation should be taught to every firefighter on the theory that whatever branch of the service he may occupy he will have need of a knowledge of the subject and its application to his own service.

In short, the subject of ventilation should be as much a part of the firemen's curriculum as the laddering of buildings, stretching of hose, or other basic fundamentals. At present this is not the case.

It should hardly be necessary to point out that there cannot be effective ventilation without good discipline among the operating personnel. Ventilation, as

will be discussed more in detail later, must be done under orders. There must be direction from above. Someone must instruct certain personnel or crews to go to the roof or to leeward; others to open up in other strategic places. Someone must see that the hose lines will be in place when ventilation is effected. Someone must set the plan of ventilation and give the orders to effectuate it. And this calls for good discipline and teamwork.

This kind of firemanship is not so easily had in the volunteer field as in the paid, professional departments. And it is among the former group that there appears to be the greatest opportunity for improvemeent in the practice of ventilation.

Good discipline should see that no fireman acts independently to open up or perform any other ventilation duty except on order of a superior. And company commanders should look to their commanding officer for their orders before instructing their men to ventilate Of course, there will be occasions where a firefighter will have to make a decision for himself on whether or not to take out a window, or force a door. Unless this involves rescue of someone, his only consideration should be, what will my action have upon fellow-firemen, and upon the course of the fire? No officer is going to censure any fireman who knocks out a window to gain life-giving fresh air when he has taken all the smoke and gases he can stand.

7. Teamwork in Ventilation: Firemen should be so trained that they can work together with a minimum of supervision. There must be teamwork between those details (usually ladder crews) doing the ventilating, and the engine or other crews stretching hose, in order that the involved building will not be opened up before the protective lines are laid and, where necessary, charged for immediate action.

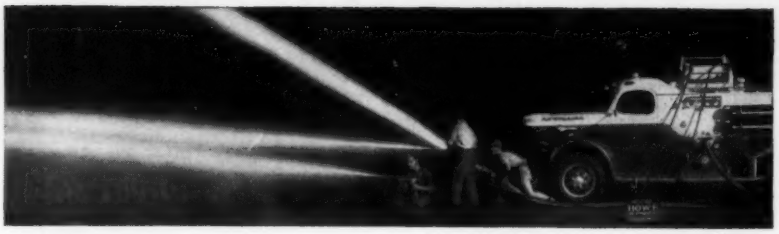
Firemen were attempting to gain entrance via ladder into the third floor of a large residence which was heavily charged with smoke. The man at the head of the ladder had successfully opened the window and was about to crawl inside when there was a sudden blast of smoke and flame which threw him back upon his fellows on the ladder and badly burned him. The entire upper part of the structure burst into flame.

The explosion was attributed to the opening of a skylight in a 2½-story addition to the building at least fifty feet distant, and was the direct result of lack of teamwork in ventilating.

In most municipal fire departments ventilation is a foremost factor in the strategy of fire attack. Yet it is conducted with careful consideration of other integers, such as rescue and extinguishment. There is teamwork in the operation, although there is not always evidence of it, nor is it always apparently "ordered."

The officer in command, when he orders a ladder crew to ventilate a roof and calls for an engine crew to advance a line to cover a possible exposure, does not have to instruct the laddermen not to open up until that covering line is laid, and charged. Teamwork between department units under such conditions is, or should be, understood and accepted as a matter of course.

Inasmuch as the practice of ventilation more often than not calls for the use of ladders and forcible entry tools,



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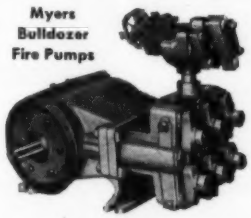

"Dual Fire Fighter" trucks, originated by Howe Fire Apparatus Co., mount a Myers Giant Bulldozer pump. It delivers 60 gpm. at a pressure of 800 psi. High-pressure lines are backed up by a high-volume hose to make the right combination for fighting a wide variety of small fires.

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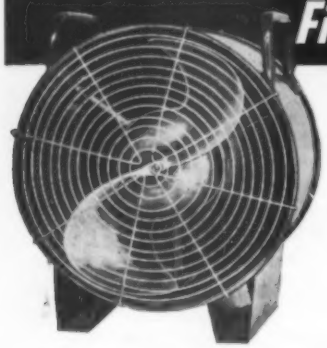

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McINTIRE GATE VALVES

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

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Model 211
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Popular price, light weight, easy to carry. Adjustable 5-inch head. Operated on two standard lantern batteries.

Write for folder on complete information on these and other Big Beam dry-cell and storage-battery models.

U-C LITE MANUFACTURING CO.

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which are for the most part only on ladder trucks, ladder men usually are given the major tasks of ventilating. But, as is stressed throughout this study, considering all other factors of ventilation and their effect upon fire spread, etc., truly efficient ventilation can only be accomplished where there is smoothly operating teamwork between all fire department operating units.

Canadian Underwriters

(*Continued from page* 1013)

small load capacity chassis while calling for a heavy load of equipment and water to be carried. The result is that the manufacturer has been obliged to build an overloaded piece of fire apparatus with poor performance characteristics. Now that the C.S.A. specification has been implemented through the Dominion Board Listing Service, all manufacturers will be in a position to say to the municipality, "We cannot build a unit to your specification and comply with the accepted standards."

The spurt test to determine whether a pumper is capable of delivering ten percent in excess of its capacity rating shows up those units lacking reserve power for pumping. A small falling off of engine power in such a unit over a few years of service may be critical. One type of pump primer in use will likely be superseded by one of higher performance characteristics able to meet the requirements of the specification in regard to suction lift.

Establishment of the Canadian pumper listing service arose as a natural sequel to the creation of the Canadian Standards Association specification on motor fire apparatus. With its nationwide affiliated testing organizations, all greatly interested in the quality of fire protection, the Dominion Board of Insurance Underwriters was in a logical position to develop and operate the procedure. It was at this point that Mr. Pryce, the Board's Director of Engineering, saw the opportunity to establish a listing service based not only upon pumping tests, but additional requirements as to performance and suitability of design, a move toward elimination of the weaknesses uncovered by underwriters' engineers in apparatus found in service. The decision of the Dominion Board to commence listing based upon Specification B89.3 was thereupon endorsed by the specification committee. The procedure to be followed was subsequently worked out by the Board's Fire Protection Engineering Department, to be finally placed in operation this year.

Controlling Hazards of Materials in Transport

(*Continued from page* 1015)

enforced will tend to minimize the possible disaster in the transportation and handling of gasoline, butane and propane:

I think it is the fire chief's duty and responsibility to call the hazards to the attention of his governing board, and ask strict regulations:

GASOLINE: We have provided the route to be traveled when making deliveries to filling stations, and the gasoline transport must return to the outside of the city by the same route. This only routes the transport over the streets you deem less hazardous, but does little to min-

imize the possibilities of a disastrous fire.

There are many things to take into consideration in connection with the gasoline transport, such as equipment and speed traveled, close observation when making deliveries, first aid fire extinguishers, parking and smoking while loading and unloading, these things all enter into the safety of the operation. For instance, the equipment should be built according to specifications set up by recognized authorities; this will guarantee most safety provisions.

The speed permitted for gasoline transports when traveling streets is a factor; it is my opinion a gasoline transport should be slowed to not exceed 20 miles per hour while inside a city.

Close observation or constant supervision while making deliveries, or even while filling transports at bulk stations, is of great importance, but this is difficult to enforce. We have experienced some sad effects due to lack of supervision. Brakes may fail, and the transport rolls ahead or back, pulling the hose apart or pulling the nozzle from the fill pipe, and the gasoline becomes ignited. There is danger of overflow. The vent can be partially blocked, or be too small, and the gasoline may become air-bound, and belch back through the fill-pipe. We have experienced fires caused from gasoline vapors coming from vent stacks or flowing back from fill pipes to become ignited by an open flame or even a neon sign.

Smoking while loading or unloading gasoline is a hazard, and should be prohibited.

The parking of a gasoline transport on the streets should be prohibited.

These hazards can only be minimized by having and enforcing regulations.

A gasoline transport should be routed around a city where possible and never permitted in the city, except to make deliveries, or pick up gasoline from bulk stations, and then they should be carefully routed so as to minimize possible dangers.

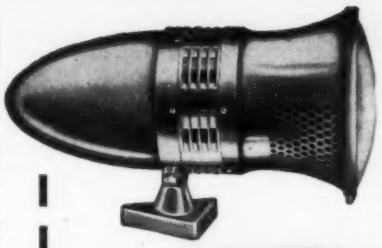
BUTANE AND PROPANE: We have a city ordinance prohibiting butane or propane transports in the city, except under certain conditions, which are:

Butane or propane transports making delivery inside the city must be inspected by the fire department quarterly, such equipment must conform to fire department regulations, such as providing two separate relief valves, either capable of relieving the internal pressure; equipment must be of standard approved design, and transports must return outside the city without delay when delivery is completed:

Butane and propane equipment not inspected and authorized to make deliveries inside the city can enter the city under two provisions of our ordinance. (1) for repairs, and then it must be empty and a special permit issued by the fire department for a definite period; (2) equipment can travel on certain designated routes that have been established, and marked by the fire department; these routes are in the outlying areas.

I would advise following strict regulations when considering butane and propane. It is much safer to prohibit the bulk storage and transports in your city; should delivery or repairs be required, these should be supervised by the fire department and immediate return of such equipment outside the city.

Parking of a butane or propane transport on Main Street in some cities is a common practice, but I don't agree that



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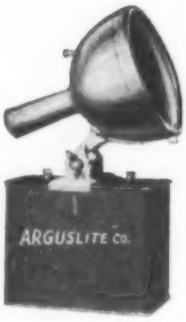

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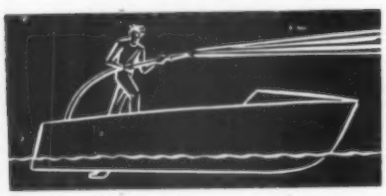

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it is a safe practice. Butane and propane are liquids contained under pressure, and as soon as released will form into a gas very rapidly. This gas is heavier than air, and will hover along the ground. Should it become released for any reason, it will become a major hazard within minutes. Keep it a safe distance from the populated areas.

Explosives such as dynamite, blasting powder, nitro-glycerine, and ammunition other than that handled by merchants is prohibited by City Ordinance, when in transit by truck except where permit is issued by the fire department for such explosives. But such permit provides for a convoy and a definite destination, and a definite period such explosives can remain in the city limits.

I would recommend high explosives in truck transit not designated for delivery in your city be prohibited from entering the city.

We have no regulations over flammable liquids, or explosives transported by railroads, except that dealing with equipment such as tank cars, and bottle gas, used by railroads or transported.

Ammunition and other high explosives transported by railroads in our city are no doubt hazards or at least would become definite hazards, should we have a fire involving some of the railroad yards, where explosives are parked while in transit.

C. D. Williams
Acting Chief, Fire Department
Las Vegas, Nev.

The City of Las Vegas adopted the suggested Fire Prevention Ordinance of the National Board of Fire Underwriters, 1947 Edition, which designates construction, operation, etc., of trucks carrying flammable liquids, explosives and other hazardous materials.

We do have designated truck routes throughout the City of Las Vegas which limits the movement of the trucks.

We have had no fires resulting from accidents involving aforementioned trucks. However, we have had occasions when tank trucks, filling storage tanks at filling stations, have over-run flammable liquids into city streets and gutters where it became necessary to use large amounts of water for flushing.

Strict enforcement of Fire Prevention Ordinances seems to be the only answer to this problem at the present time. As has been stated, we have had no catastrophic fires in regard to these trucks; consequently, we have not had serious problems confronting us but we are preparing standard operating procedures to be used in different areas throughout the city should such accidents happen.

John W. Hall
Chief, Fire Department
Hagerstown, Md.

The Police Department escorts all explosives trucks through the city. Movement may be limited to certain specified streets, but in the past the route has been left to the discretion of the officers in the patrol cars.

We have not had to cope with fires or other catastrophies resulting from accidents involving such trucks.

I believe the ultimate answer to this problem would be a by-pass around affected cities. I realize that in some cases, such as ours, this would be extremely difficult. I also believe that an extensive course in driver education would help to reduce this hazard.

F. L. Crouse
Chief, Fire Department
Huntington, W. Va.

We do not have any law covering the movements of trucks over the city streets. There seems to be the attitude here that the city cannot prohibit the trucks on the highways through the city.

Just a few years back we had a gasoline truck take fire in a residential district but, due to the quick thinking of the driver, he was able to save several houses from being burned.

This is one of the biggest problems we have today, not only from the standpoint of fire, but also the traveling public. If there could be a national law passed to prohibit the hauling of explosives or flammable liquids through city streets, it should be done by all means.

Runnemede

(*Continued from page* 1023)

serious nature, but one fireman, Joseph H. Bailey, of Westville, N. J., former president of Union Fire Company, died later after returning home from conditions probably induced by the strain and excitement. The Bellmawr Rescue squad treated most of the injured, only one victim being taken to a hospital. He was Paul Pagano of the Bellmawr Park department.

Following the fire, which was under control in about an hour, it was reported that arson was suspected, and investigators of the National Board of Fire Underwriters were called. Working with Chief Beeby, Police Chief Paul Erdbrink, and Borough Fire Marshal Louis Porter the cause was finally traced to a defective fuse in a switch box.

Property loss was estimated at $100,000.

Ontario Conversion Program

(*Continued from page* 1024)

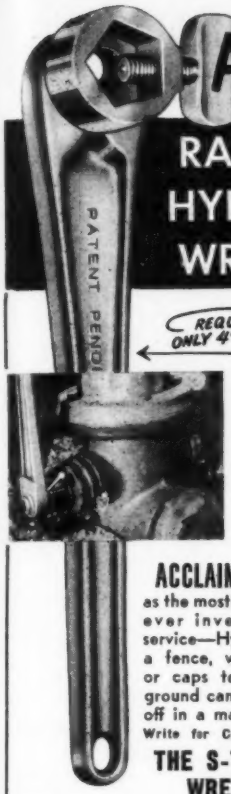
equipment to the new standard. Local authorities send in specifications on hydrants and fire equipment in use in their area; blue prints are prepared and necessary parts and equipment to convert are manufactured. Then the Ontario mobile crews go out and make the installations and finally ship the salvage back to the foundry.

JOHN KARL LEE

Walla Walla Worried

Three fires, all of them of mysterious origin and all of them costly, have had the police and fire forces of Walla Walla, Wash., worried. All leaves of absence were cancelled by police who doubled their patrols of the city's industrial area, following the third blaze on October 4th.

The last two were warehouse fires and, according to observers, both these fires seemed to "explode" and spread through the middle of the structures. The most serious, and the third of the three blazes, occurred in the Mojunner & Sons, Inc., produce warehouse, formerly a Northern Pacific Railway freight house. The structure contained a variety of storages, including barrels of weed spray and canned food. The loss in this fire was estimated at $150,000.



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Seven pieces of fire apparatus, including trucks from District 4 and the Air Base, fought this blaze, which was reported at 12:40 A.M. Five firemen were injured in the struggle.

On the preceding Friday, Oct. 2nd, 25 volunteer firefighters from District 4, aided by firemen from Walla Walla City Department and the Walla Walla Air Base Department, battled the second major blaze. This involved and leveled the Gradwohl Auction House and destroyed a barn and several nearby small sheds.

Chief Carroll Duff, District 4, said this fire apparently started in the rear of the auction house and was not discovered until the roof started to cave in. The flames, fanned by a high wind consumed the entire building. The efforts of fire forces from District 4 supplemented by a unit from Walla Walla and one from the City-County Airport resulted in the saving of a home and some other exposures.

New York City Buys Apparatus

Bids were opened by the City of New York on October 10 for twenty-five aerial trucks; and on November 10 for twenty-five pumpers.

The bids taken for the aerial trucks covered both wood and metal. The pumpers are to be of 750 gallon capacity, and each equipped with booster tank.

Bradford Celebrates Golden Anniversary

The Bradford, Pa., Fire Department this year celebrates its 50th year as a paid unit. It was in April, 1903, that the volunteers gave way to the paid men. The department was first organized in 1871.

In 1903 the department still had horse-drawn apparatus. Motorized units gradually took their place and today the city boasts a modern well equipped and trained department. There are four pumpers; a 75-foot aerial ladder; emergency ambulance, and chief's car, the department being manned by a chief, assistant chief, two captains and 27 men.

The anniversary marks the retirement, also, of Chief Edward B. Larkin after 40 years of service, 25 years of which he headed the organization. He is succeeded by Edward T. Brophy, an 18-year member of the department.

Chief Larkin started with the department in 1903 and served continuously until 1913, when he retired with rank of assistant chief. However, the nostalgia of fire fighting got him and he returned to the force in 1923 as a "rookie." Less than five years later he was made chief. He estimates that in his active career he responded to more than 14,000 alarms.

Convention Dates

November 21 — KEYSTONE STATE FIRE CHIEFS ASSOCIATION. Fall meeting, Marcus Hook, Pa. The conference will feature a trip through the Sun Oil Co. refinery. Secretary, Lew Atkinson, Malvern, Pa.

Dec. 5-6—ILLINOIS FIRE CHIEFS ASSOCIATION. Annual meeting, Hotel Wolford, Danville, Ill. Secretary, Arthur Holtz, 822 Hillgrove avenue, Western Springs, Ill.

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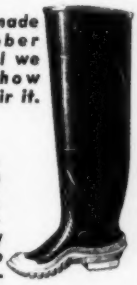

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To speed hydrant hookups, we carried a spare set of hose and hydrant tools secured to the harness leather straps on our soft suction hose holder. While the tools were within easy reach, they could not be readily removed. No matter how well they were tied to the hose straps, the tools scratched the sides of our truck. If the hose is in a box type holder, a much better method is to attach a three partition canvas bag to the back of the carrier. A rectangular bag roughly 19" high, 12½" wide and 2½" thick, plus a tiedown rain flap, will hold a hydrant wrench, rubber tipped hammer and several spanner wrenches ready for instant use. For the lady seamstress the bag would be: length top to bottom 19", width side to side 12½", back to front 2½".

The bag should be equipped with two oval holed grommets; any automotive upholstery shop can furnish and install the grommets for 40 or 50 cents. We removed two of the small twist type hose cover canvas fasteners from our pumper and mounted them on the back of the suction hose holder to anchor the bag to the carrier.

CHIEF SYDNEY R. DOBBS, Newtown, Conn.

* * *

NEW HOSE CLAMP AND HOSE ROLLER

A new idea in what may be called a combined hose clamp and hose roller has been developed by John E. High, P. O. Box 533, Winston-Salem, N. C. The device was shown at the North Carolina fire association at Charlotte, N. C., in September, and attracted considerable attention.

According to Mr. High, the device, which is patented, performs the dual function of the orthodox hose roller, but in addition, it clamps onto the charged hose line to hold it in position, once it is hauled over the roller part. The illustrations give some idea of the "gadget", and its essential parts.

Mr. High reports it can be attached to any window sill, ladder rung or fire escape. It can be used to hoist a line of hose, or a rope. The hose can go up, but the clamp prevents it going down. The inventor says it is simple to operate, the clamp part being automatic, as the hose passes through. It weighs about 14½ lbs.

* * *

HOW AN "AERIAL FIRE" WAS FOUGHT

Many times we hear the firemen must have initiative, and proof that they have was demonstrated by the fire department at Kemano, B. C. A clearing had been made for an aerial tram up the mountain to the twenty-six-hundred foot level and a fire occurred in the slash at the fifteen hundred foot level. To get any fire fighting equipment to this area would entail hours of very difficult work. Presto! someone has a brainwave; why not take a jeep fire engine and 200-gallon trailer water tank up the mountain side by aerial tram and fight the fire from the air? This was decided upon and, with the jeep's front mounted pump coupled to the water tank, the crew was successful in extinguishing the blaze from a comfortable position.

—(*From the Fire Service News, Vancouver Fire Marshal's Office, Sept.* 1952.)

* * *

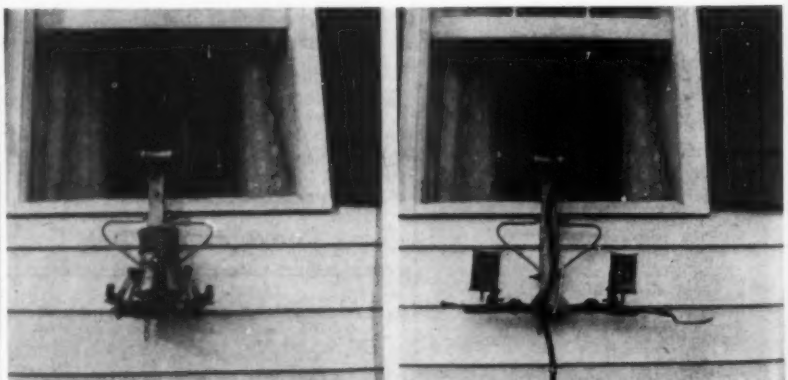
HOW TO LOCATE THE REAR OF A BUILDING?

One of the fire attack problems is how to properly and quickly locate the building directly behind the structure on fire, in order to get at the fire from the rear or to cover exposures or possibly effect rescues.

Many a structure has been opened up needlessly, with consequent damage to property and contents and a serious loss in time and effort by firemen only to find that it was not located directly in the rear of the building involved by fire.

How to quickly and easily determine the area in the exact rear of the premises involved regardless of confusion over street numbers, dark, or smoke or other handicaps was taught in some of the early handbooks published by FIRE ENGINEERING. Here is a simple rule worth reprinting:

Start from the front of the burning building, walk quickly to the nearest corner, counting the number of steps



Left: Hose clamp in closed position. Right: Hose clamp in opened position.

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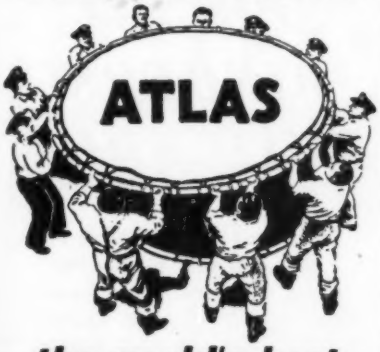

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made. Turn the corner and go to the next street and walk back parallel to that in which the fire is, counting the same number of steps as on the first street. This gives you the approximate line of the burning structure. Go through the building in front of which you are standing and the chances are that you will find yourself back of the building that is on fire.

* * *

IDEAS "LIFTED" FROM W.N.Y.F.

Far and away the best publication issued by any fire department of this nation is "W.N.Y.F.", the voice of the New York Fire Department. It is written by firemen for firemen. And over the years it has contained many practical hints for the craft. The following are samples:

Notch That Hook—Some companies have notches cut in the 6-foot hooks on the goose-neck side. This facilitates the use of the hook when conditions are too smoky for visibility. For example: When pulling a ceiling and the overhead can't be seen, the fireman will be able to tell in which direction his hook is pointing by feeling of the notch.

MARTIN SWEENEY, Lieut. H & L 26

To Get a Line on Lath—When using a 6-foot hook, it is well to remember that the lath in a ceiling usually runs from front to rear, except on the top floor where it is crosswise.

EGMONT HUERSTEL, Fireman H 103

Lubricate That Axe—When cutting up roof in overhauling operations, it is usually found that tar adheres to the axe blade, making cutting difficult. Put lubricating oil on the blade and it will work much easier.

WM. J. COOK, Lieut. Eng. 231

Simonize wax will not only give the uniform cap visor dazzling shine; it preserves as well. At the same time it can be used to polish badges and buttons.

EDWARD P. UPTON, Fireman 35th Batt.

* * *

PRESERVE OLD FIRE WELLS

From Council Bluffs Iowa, via contributor Mortimer Hahn, comes a news story that might possibly interest some of the cognoscenti.

Not long ago, it seems, construction workmen uncovered a 100-year-old cistern while digging a narrow lateral sewer line across Broadway, that city. The top of the arched brick structure was torn away and it was filled with fine sand. A concrete slab of paving was poured over the spot.

It is disclosed that this cistern is only one of several laid down about a century ago, as part of a workable master plan for fighting fires before the era of high pressure hose and handy hydrants on every corner.

The real "well" of the plan is located beneath South First street, according to Assistant Fire Chief McCord Park. It is accessible by manhole and partially filled with water at all times, he said. Firemen for practice often worked pumpers at the well but never pumped it dry, according to the Chief.

From this water source, back in the days before hydrants, the vamps with hand pumps and hose would relay water in short jumps from this cistern to

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others along the main street and elsewhere.

Reviewing the question of these ancient underground wells and cisterns, Fire Chief Waldo Merrill believes "it will be well to preserve them." Such cisterns with a storage capacity of about 50,000 gallons would each prove valuable in an emergency or a major disaster, the Chief pointed out.

Speculation as to the possible danger of the old cistern caving in was ridiculed by Architect R. C. Robinson when he reviewed the latest uncovered "find." The brick masonry and inner liner of mortar in the cistern were in excellent condition. Its arched construction provides the perfect architectural truss, Robinson said. "The heavier the pressure from above, the stronger it (the cistern) would become," he added.

Chief Merrill said other cisterns could be easily restored to a standby use. "I think the city should attempt to locate the others as part of a disaster plan," he declared.

Kaiser Steel Boosts Fire Prevention Week

Workers at the Kaiser Steel Corporation's Fontana, Calif., plant learned about fire prevention the most effective way—by putting out fires themselves.

Firemen from Kaiser's plant protection department give group instructions on use of fire extinguishers to all mill and office employers. Then actual fires were started and the employes themselves, using the extinguishers, put out the blazes.

Instructions in fire prevention and extinguishment featured fire prevention week observances at the Fontana mill but the plant protection department carries out a year-round program of training employes in how to use carbon dioxide extinguishers in putting out gasoline or oil fires. —PAUL C. DITZEL

Book Shelf

HAZARDOUS INDUSTRIES. Edited by A. S. Minton and W. Thomas. Published for the Institution of Fire Engineers, 94 Southwark Bridge Rd. S.E. 1, London, by Chantry Publications, Ltd., London, 1953. 106 pages, stiff cloth binding. For sale by Institute, 6s.0d. post free.

This textbook has been prepared principally for students who are studying for examinations of the Institution of Fire Engineers and/or for other official fire service examinations. It is intended to furnish useful information about various industries which have particular fire hazards. Technicalities have purposely been held to the minimum. In its 106 pages it covers a wide score of subjects such as acetone distillation, acetylene welding, aircraft factories, manufacturing of numerous synthetic products, and processing of various hazardous materials.

FOAMS: THEORY AND INDUSTRIAL APPLICATIONS, by J. J. Bikerman. Reinhold Publishing Corporation, 330 W. 42nd St., New York 36, N. Y. 347 pages, cloth bound; price, $10.00.

Said to be the only complete treatise on foam, this book should bring the technical fire fighter up to date on the subject, even though only one of its fifteen chapters is specifically devoted to fire-

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fighting foams. This Chapter was prepared by J. M. Perri, National Foam System, Inc., West Chester, Pa., and deserves a place in every fire service technical library.

The first three-quarters of the book material is devoted to the chemical and physical properties of foams. Phenomena such as foam formation and structure, foam drainage and the mechanical, optical and electrical properties of foams are discussed.

The remaining chapters describe the more important applications of foams in fire protection and other fields.

The book contains inexhaustible reference material, annotations and bibliographical data.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of October, 1953.

Month Ending October 31, 1953

Crossville, Ala.—Jones Gin and Oil Mill destroyed.

Tombstone, Ariz.—Historic Loma de Plata guest house destroyed.

Calico, Ark.—Anthony-Williams Lumber Co. mill, 11 miles northeast, destroyed. Forest fire.

Burbank, Cal.—Glass Fiber, Inc., plant destroyed. Static electricity generated by rollers in laminating booth.

Grimes, Cal.—Rice drier of Sacramento River Warehouse Co. at Miller's Landing, 12 miles south, destroyed.

Los Angeles, Cal.—Lighthouse Lamp and Shade Co. plant damaged. Explosion in finishing department.

Los Angeles, Cal.—Truck Terminal warehouse occupied by two trucking firms, Marr Freight Transit, Inc. and Cook & Tillitt Freight Service, destroyed. Incinerator.

Mare Island, Cal.—Naval Shipyard pier, destroyed.

Monrovia, Cal.—E-Z Rest Co. furniture plant, destroyed.

Monterey, Cal.—Sea Beach Cannery and Custom House Cannery destroyed.

Oakland, Cal.—Allied Enterprises, General Sales Co. and warehouse of Port of Oakland, destroyed. Paint explosion.

Oroville, Cal.—Feather Mart destroyed. Short circuit.

San Francisco, Cal.—Apartment at 1922 Mission street and Garden Court Apartments, damaged.

San Jose, Cal.—P. W. Market destroyed.

Twain Harte, Cal.—Twain Harte Lodge, destroyed.

Branford, Conn.—Poultry house on U. S. Route 1 destroyed.

Redding, Conn.—"Lobster Pot," a summer home owned by the Rev. Anton P. Stokes, Jr., destroyed. Oil burner explosion.

South Windsor, Conn.—Kelsey-Ferguson brick yard destroyed.

Campbellton, Fla.—Graceville Peanut Co. shipping warehouse and stored products, destroyed.

Atlanta, Ga.—Freight Delivery Service building destroyed. Defective flue.

Carrollton, Ga.—H. W. Richards Lumber Co. building destroyed.

Vidalia, Ga.—Robert Toombs Hotel destroyed. Defective wiring.

Aurora, Ill.—First Methodist Church of Aurora destroyed. Arson.

Chicago, Ill.—Union Stockyards damaged.

East Alton, Ill.—Smokeless powder processing plant, Olin Industries, heavily damaged. Explosion.

Monmouth, Ill.—Monmouth Lumber Co. yard destroyed.

Norwood Park, Ill.—World-Wide Chinchilla Ranch, breeding and sales plant, destroyed.

Peoria, Ill.—Mid-Continent Lumber Co. destroyed.

Waterloo, Ill.—Horn Feed Mill destroyed.

Columbus, Ind.—Joseph Kroot Co. junk yard damaged. Overheated light bulb ignited bales of wood fiber.

Evansville, Ind.—Huge warehouse in heart of business district, destroyed. Burglars.

Indianapolis, Ind.—Warehouse occupied by Highway Truck Parts Corp. destroyed.

Muncie, Ind.—Eden Congregational Christian Church, 10 miles north, destroyed.

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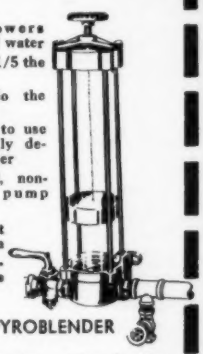

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Terre Haute, Ind.—Warehouse of Terre Haute Heavy Hardware, Inc., destroyed.

Calamus, Ia.—Building housing Armstrong general store, locker plant and coffee bar destroyed.

Council Bluffs, Ia.—Building housing Band Box Cleaners and four apartments, damaged.

Iowa City, Ia.—Chemistry-Botany building at State University of Iowa, damaged. Explosion.

Louisville, Ky.—General Box Co.'s embry division, destroyed.

Louisville, Ky.—Barn and store at 1328 S. 12th street and stock of paint, plywood, paper and art supplies, owned by Martin Solomon and others, damaged. Arson.

Fryeburg, Me.—Warehouse No. 5, rear of Main Central Railroad Station, of J. B. Baxter & Co. and canned corn, destroyed.

Lewiston, Me.—Enterprise Brass and Iron Foundry damaged. Spark from smelter.

Attleboro, Mass.—Building housing a bowling alley, Brownell Mill Supply Co., a hardware store, automatic laundry and warehouse of Dexter Furniture Co., destroyed.

Boston, Mass.—Government Experimental Fishing Trawler Delawart, operated by the Fish & Wildlife Service of the Department of the Interior, destroyed.

Boston, Mass.—Dover street bridge of New Haven Railroad, damaged.

Milford, Mass.—Milford's newest business block at corner of Main and Central streets, including several stores, cafe and business office, destroyed.

North Adams, Mass.—Lumber yard of S. B. Dibble Lumber Co. and nearby dwelling of Rudolph Maganani, destroyed.

Woburn, Mass.—White Spot Restaurant, junction of routes 3 and old 128, destroyed.

Battle Creek, Mich.—Van Buren Steel Products plant damaged.

Flint, Mich.—Labor Temple, headquarters of United Auto Workers Region 1C offices and C. I. O. Council and affiliated organizations, together with adjacent tavern, damaged. Explosion.

Kalamazoo, Mich.—Barn on Jasper Bunschotn Farm, 17 miles south, destroyed.

Owosso, Mich.—Miner Building occupied by Kline Department store and several business and legal offices, destroyed.

Faribault, Minn.—Dairy barn at Minnesota School for Feeble-Minded and home, destroyed. Gas or oil explosion.

California, Mo.—Building of Farmers Equipment Store, Inc., destroyed.

Goffstown, N. H.—Freezer plant and barn of John A. Parker, Parker Station section, destroyed.

Bridgeton, N. J.—Natural Gas Co. building, destroyed. Explosion.

Edgewater, N. J.—Storage warehouse of Falk Oil Co., destroyed.

Metuchen, N. J.—Building occupied by Metuchen Sweet Shop, Metuchen Delicatessen, Bond Cleaners, Modern Age Shoe Shop and optometrist shop of Dr. Lester S. Gassman, destroyed.

Williamstown, N. J.—Plant of Tiger-Lily Hosiery Mills, Fine Made Hosiery Co., damaged.

Albuquerque, N. M.—Ice Arena destroyed.

Santa Fe, N. M.—Colwes Pontiac garage destroyed.

Buffalo, N. Y.—New-Stateland, a downtown roller rink, destroyed.

Carthage, N. Y.—Carthage's oldest industry, machine shop of Ryther and Pringle Co., destroyed.

Fluvanna, N. Y.—Paralite Corp. factory destroyed.

Forest Hills, N. Y.—Ed Kenney's Bar destroyed.

Lackawanna, N. Y.—Residential business building at Ridge and Simon damaged.

Mountain Dale, N. Y.—Main building of Utopia House, a summer hotel at Sullivan County resort, six miles out, destroyed.

Stewart Air Force Base, N. Y.—Maintenance hangar and a single engine T-6 trainer plane at this headquarters of the Eastern air defense force destroyed.

Syracuse, N. Y.—Buildings owned by Derby Lumber Co., Floor Contracting Co. and Eastwood Lumber Co., just over the city line, destroyed.

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1947 Superior Pontiac Ambulance
1947 Miller Cadillac Ambulance
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1946 Flxible Buick Ambulance
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1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Case-Shepperd-Mann Publishing Corp., 24 W. 40th St., New York 18, N. Y.; Editor, Fred Shepperd, 24 W. 40th St., New York 18, N. Y.; Managing editor, Fred Shepperd, 24 W. 40th St., New York 18, N. Y.; Business manager, I. H. Case, 24 W. 40th St., New York 18, N. Y.

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I. H. CASE, *Business Manager*

Sworn to and subscribed before me this 28th day of September, 1953.

WALTER H. FREDRICKS,
[SEAL] *Notary Public.*
(My Commission expires March 30, 1954)

Henderson, N. C.—Watkins Sydnor Co., wholesale grocery office and warehouse, destroyed; in same fire, North State Equipment Co. destroyed; W. T. Jarrells Restaurant damaged.

LaGrange, N. C.—Hardy & Newsome Manufacturing Co. building destroyed.

Parmele, N. C.—W. C. Chance Negro high school destroyed.

Alliance, Ohio—Warner-Kulka building, including a ballroom and Dyke Automotive, Inc., auto parts store, destroyed. Spontaneous ignition in stored dust mops.

Fremont, Ohio—Main plant of Bloom Seed Co. destroyed.

Toledo, Ohio—Baker Shoe Store, Inc., destroyed. Sparks from a welder's torch.

Eugene, Ore.—Kimba Bros. saw mill destroyed.

Klamath Falls, Ore.—Dunsmuir Lumber Co. destroyed.

Lauerdale, Pa.—Gridcasting building of Bowers Battery Co. destroyed. Oil ignited by heat.

Media, Pa.—Building of County Chevrolet, Inc., destroyed.

Pittsburgh, Pa.—Three buildings in East Liberty section, occupied by Islay's store, drug store and jewelry shop, destroyed.

Scranton, Pa.—Pure Carbonic Co. plant destroyed. Explosion.

West Philadelphia, Pa.—Presbyterian Home for Aged Women destroyed.

Westtown, Pa.—Barn on Marshall L. Jones farm destroyed.

Cranston, R. I.—Mansion of Whipple D. Crossman, Applehouse Hill, destroyed.

Batesburg, S. C.—Warehouse of E. S. Copeland, manufacturer of display racks, destroyed. Short circuit.

Camden, S. C.—Cotton platform and 300 bales of cotton and nearby livery stable destroyed.

Columbia, S. C.—Edens Food Store damaged.

Rock Hill, S. C.—Ratterree Building housing Ratterree Drug Co., Simpson's Radio and TV Center, a photographic studio, loan company and a tailor shop destroyed.

Sunbright, Tenn.—Office, dry kiln and one and a half acres of Norman Lumber Co. destroyed. Overheated motor.

Houston, Tex.—B & L Sales Co. store destroyed.

Houston, Tex.—Burton lumber yard destroyed.

Sulphur Springs, Tex.—Sulphur Springs Cotton Oil Co. destroyed.

Tivoli, Tex.—Half block of business buildings in this farming community, including a grocery, barbershop, pool hall, power company office and local post office, destroyed.

Price, Utah—Redd Motor Co. garage destroyed.

Arlington, Va.—Drug Fair Store in Shirlington Shopping Center damaged.

Roanoke, Va.—Harris Hardwood Co. damaged.

Centralia, Wash.—B. & M. Auto Parts Co. destroyed.

Port Angeles, Wash.—Port Tie & Lumber Co. mill destroyed.

Seattle, Wash.—"Ocean Cape," fishing boat of Walter F. Kiewemo, destroyed.

Seattle, Wash.—Food Packers, Inc., destroyed. Faulty power lines.

Spokane, Wash.—Hillyard Furniture Co. damaged. Short circuit.

Spokane, Wash.—Grain elevator, warehouse, offices, retail store of Aslin-Finch Grain Co. destroyed.

Vancouver, Wash.—Firland grocery, garage, TV station destroyed. Arson.

Walla Walla, Wash.—Monjonnier & Sons Produce Warehouse destroyed.

Yakima, Wash.—Benoit Moxee Market destroyed.

Wellsburg, W. Va.—Wellsburg High School damaged.

Fairchild, Wis.—Main plant, sawdust building and power plant of Raddison Woodenware Co. destroyed. Sparks from saw.

Kaukauna, Wis.—Fox River Valley Veneer Co. plant destroyed.

Monroe, Wis.—Buildings on Frank J. Koch farm, three miles east, destroyed.

Rhinelander, Wis.—Warehouse at Starks Farms, 12 miles east, destroyed.

Riverton, Wyo.—Riverton National Guard Armory destroyed.

Vancouver, B. C.—Malhat Lookout Restaurant, Kaslo Hotel and Vancouver Apartment House destroyed.

Vancouver, B. C.—Salvage King Tugboat destroyed.

Brandon, Man.—Brandon's biggest industrial plant, the million-barrel refinery of Anglo Canadian Oils, Ltd., destroyed.

Bright's Grove, Ont.—Building occupied by hardware and grocery store, a snack bar and apartment occupied by the owner, in business section, destroyed.

Ingersoll, Ont.—Interior of Christie's Electric Store destroyed.

Port Credit, Ont.—Auto accessory store and two apartments, three miles east, on Lake Shore Road, destroyed. Oil furnace explosion.

Stratford, Ont.—Garage at Shakspeare, seven miles east, destroyed.

Montreal, Que.—Fifty stables and the grandstand at Richelieu Race Track in Bout de Lille at east end of Montreal Island destroyed.

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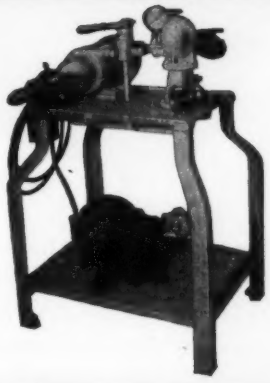

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NOVEMBER, 1953

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Radio Apparatus Corp.	1033
Radio Corp. of America	1029
Randolph Laboratories, Inc.	1053
Rockwood Sprinkler Co.	1000
Rowland Co.	1046
Russell Uniform Co.	1059
S-T Hydrant Wrench Co., The	1059
Scott Aviation Corp.	1041
Seagrave Corp.	1001
Smith & Co., D. B.	1047
Stephenson Corp.	1046
Sterling Siren Fire Alarm Co., Inc.	1057
Super-Vacuum Mfg. Co.	1056
Thiele & Sons, Inc., W. J.	997
Trippe Manufacturing Co.	1062
U-C Lite Mfg. Co.	1056
United States Rubber Co.	1043
W-B Manufacturing Co.	1051
Ward LaFrance Truck Corp.	989
Waukesha Motor Co.	984
Wooster Brass Div., Fyr-Fyter Co.	982

TO OPERATE
1. KEEP EXTINGUISHER UPRIGHT
2. PULL RING PIN AND PUSH ON LEVER
3. SQUEEZE NOZZLE TO RELEASE CHEMICAL
4. DIRECT STREAM AT BASE OF FLAMES
ANSUL
DRY CHEMICAL FIRE EXTINGUISHER

In A Fire Emergency..

ALL HANDS ARE "SKILLED HANDS"

WITH

ANSUL DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT

With Ansul Extinguishers near-expert results are obtained by inexperienced operators. In fact, all Ansul Extinguishers are designed to provide a maximum of extinguishing effectiveness in the hands of inexperienced personnel.

This feature, plus benefits listed below, account for the outstanding preference for Ansul Equipment by fire protection men in all phases of industry the world over.

1. Water-tight construction throughout.
2. Easy on-the-spot Recharging (No tools needed.)
3. Quick, positive puncture operation.
4. Special cartridge guard protects cartridge . . . rugged construction throughout.
5. Ansul *"PLUS-FIFTY"* Dry Chemical used exclusively.
6. Corrosion resistant construction throughout.
7. Greater fire-stopping power.
8. Field tested by thousands of satisfied customers.

Send for File No. A-105. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

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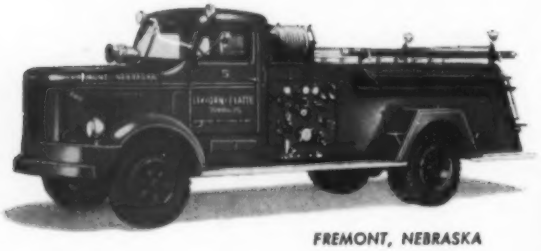

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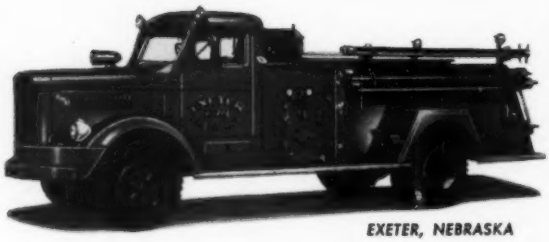

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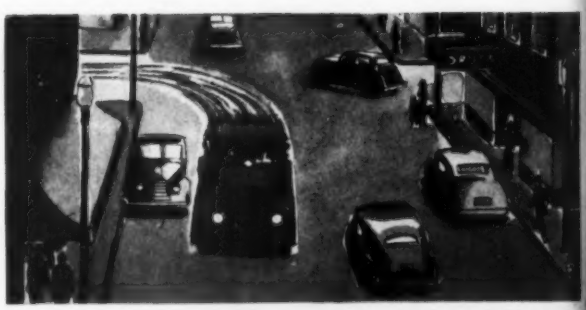
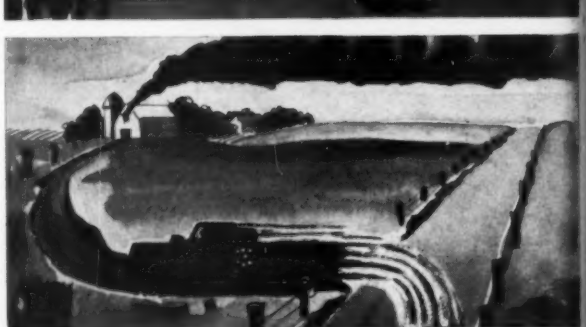
To fight fire effectively, you've got to get there *fast*—with truck and crew in *one piece*, too! Squeeze in that extra ounce of speed without jeopardizing men or equipment . . . *you can do it* with an FWD Engine! Four-wheel drive lets you *cut corners close to the curb* at high speed, with no need for a round-house swing into opposing traffic *whatever* the weather or condition of pavement. All wheels driving, gripping, braking, with weight *correctly* proportioned between front and rear axles, keeps you *on the road* and *out of skids and spins*. When *you've* got to go where the road *doesn't*, only four-wheel drive can get you through—*dependably*, with speed *and* safety! "Take off" across country if you need to —an FWD goes nearly anywhere! No wonder responsible officials all over America are turning to FWD . . . are YOU one of them?





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